ORDER NO. MKE0401001C1
B3

Service Manual

Video Cassette Recorder

PV-V4524S / PV-V4624S / PV-V464S / PV-V4524S-K / PV-454S-K / PV-V4624S-K

For servicing the R4-Mechanism Chassis for PV-Model, Please refer to the R4-Mechanism Chassis for PV-Model Service Manual (Order No. MKE0401000C1).

SPECIFICATIONS

ITEM	SPECIFICATION	1	2
Power	Source: 120V AC±12V AC, 60 Hz±3Hz	○	○
	Consumption: Approx. 18W (Power on), Approx. 0.95W (Power off)	○	○
Video	Head: 4 rotary heads helical scanning system	○	○
	Input Level: VIDEO IN Jack (Phono type) 1.0Vp-p 75Ω unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43dB SLP: more than 41dB	○	○
Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads	○	○
	Input Level: AUDIO IN Jack (Phono type) -10dBv 50kΩ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8dBv 1kΩ unbalanced	○	○
	Frequency Response: Normal Mono: SP: 100Hz-8kHz SLP: 100Hz-5kHz Hi-Fi Stereo: SP/SLP: 20Hz-20kHz	○	○
	Signal-to-Noise Ratio: Normal Mono: SP: more than 42dB SLP: more than 40dB Hi-Fi Stereo: SP/SLP: more than 60dB	○	○
	Wow and Flutter: Normal Mono: SP: Less than 0.2% WRMS SLP: Less than 0.4% WRMS Hi-Fi Stereo: Less than 0.015% WRMS	○	○

ITEM	SPECIFICATION	1	2
RF Out	CH 3/CH 4 switchable 72 dBμ (open voltage) 75Ω unbalanced	○	○
Tuner	Broadcast Channels: VHF 2~13, UHF 14~69 CABLE Channels: Midband A through (14~22) Superband J through W (23~36) Hyperband AA~EEE (37~64) Lowband A-5~A-1 (95~99) Special CABLE channel 5A (01) Ultraband 65~94, 100~125	○	○
Video Signal	EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○
Tape Speed	SP: 1-5/16 i.p.s (33.35mm/s) SLP: 7/16 i.p.s (11.12mm/s) Record/Playback Timer: 8 hr. with 160min. type tape used in SLP mode	○	○
Tape Format	Tape width 12.7mm (1/2inch) high density tape	○	○
Operating Condition	5˚C-40˚C (41˚F-104˚F) (Temperature) 10%-75% (Humidity)	○	○
Dimension (WxHxD)	360mm x 93mm x 240mm (14-3/16inch x 3-11/16inch x 9-7/16inch) 430mm x 98mm x 240mm (16-15/16inch x 3-7/8inch x 9-7/16inch)	○ –	– ○
Weight	2.3kg (5.1lbs) 2.55kg (5.6lbs)	○ –	– ○
Solder	This model uses lead free solder (PbF).	○	○

1. PV-V4524S/ PV-V4524S-K/ PV-454S-K
2. PV-V4624S/ PV-V464S/ PV-V4624S-K

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

1. SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these criticalparts should be replaced with manufacturerís specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.
2. **An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personalinjury from electrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.**
3. **When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
4. **After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
5. **After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

LEAKAGE CURRENT COLD CHECK

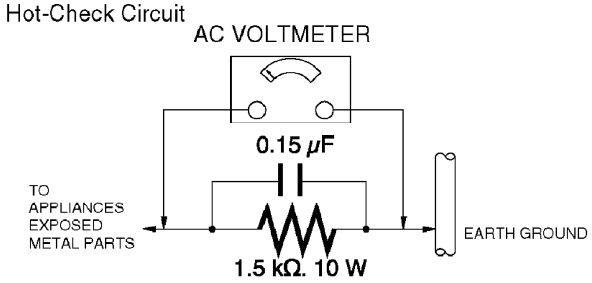
1. **Unplug the AC cord and connect a jumper between the two prongs on the plug.**
2. **Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the**

equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to thechassis, the reading should be between 1 M Ω and 5.2 M Ω . When the exposed metal does not have a return path to the chassis, the reading must be infinity.

LEAKAGE CURRENT HOT CHECK / (See figure 1.)

1. **Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.**
2. **Connect a 1.5 k Ω , 10 W resistor, in parallel with a 0.15 μ F capacitor, between each exposed metallic part on the set and a good earth ground, as shown in figure 1.**
3. **Use an AC voltmeter, with 1 k Ω /V or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 V RMS.**
   A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, andthe equipment should be repaired and rechecked before it is returned to the customer.

Figure 1



2. PREVENTION OF ELECTRO-STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits, some field-effect transistorsand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

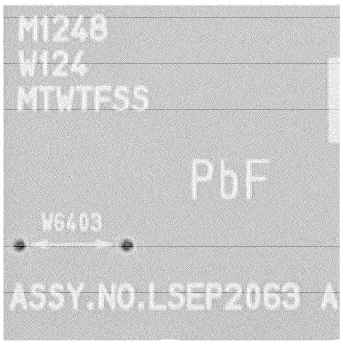
1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, whichshould remove electrostatic charge for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparableconductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**
   CAUTION:
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD)sufficient to damage an ES device).**

“NOTE toCATV system installer:
This reminder is provided to call the CATV system installerís attention to Article 820-40 of the NEC

that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding systemof the building, as close to the point of cable entry as practical."

3. ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:
PCBs (manufactured) using lead free solder will have a PbF stamp or printing on the PCB.
(Please refer to figures.)



Printed case

Stamped case

CAUTION:

- Pb free solder has a higher melting point than standard solder;
Typically the melting point is 50°F - 70°F (30°C - 40°C) higher.
Please use a soldering iron with temperature control and adjust it to 700°F ± 20°F (370°C ± 10°C).
In case of using high temperature soldering iron, please be carefull not to heat too long.

- Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).

- All products with the printed circuit board with PbF stamp or printing must be serviced with lead free solder.
When soldering or unsoldering, completely remove all of the solder from the pins or solder area, and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations
Recommended lead free solder composition is Sn96.5 Ag3.0 Cu0.5.

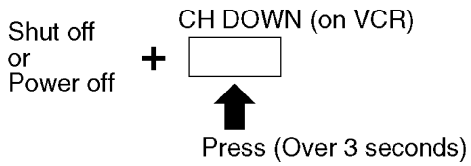
4. SERVICE NOTES (PLEASE READ)

4.1. SELF-DIAGNOSIS INDICATION DISPLAY

This VCR has a self-diagnosis and display function.

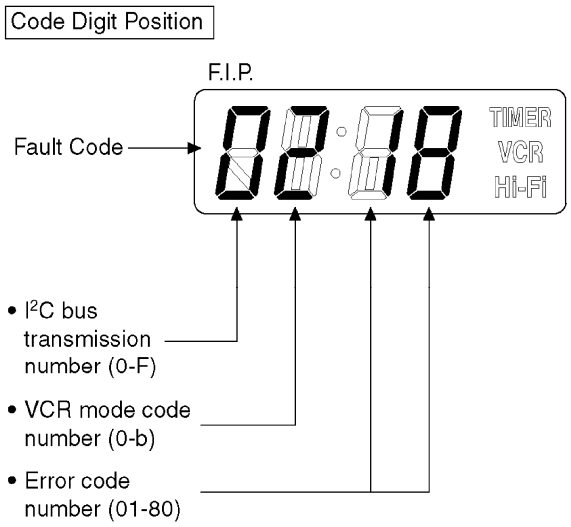
1. Press CH DOWN Button on VCR for over 3 seconds in Power off condition, or keep pressing CH DOWN button on VCR in Shut off condition.

Fig. 1-1



2. Fault code (4-digit number) will be displayed in F.I.P. as shown.

Fig. 1-2



4.1.1. Explanation of I 2 C bus transmission number

The condition of I²C bus transmission befor shut off is displayed.

Fig. 1-3

Condition of I²C bus transmission (IC6001↔Tuner)	Condition of I²C bus transmission (IC6001↔IC6004)	Condition of I²C bus transmission (IC6001↔IC3001)	Condition of I²C bus transmission (IC6001↔IC4201)	Code No.
OK	OK	OK	OK	0
			NG	1
		NG	OK	2
			NG	3
	NG	OK	OK	4
			NG	5
		NG	OK	6
			NG	7
NG	OK	OK	OK	8
			NG	9
		NG	OK	A
			NG	b
	NG	OK	OK	C
			NG	d
		NG	OK	E
			NG	F

4.1.2. Explanation of VCR mode code number

The condition of VCR Mode before shut off is displayed.

Fig. 1-4

VCR Mode	Code No.	VCR Mode	Code No.
STOP	0	PLAY	8
EJECT	1	STILL	9
REW	2	REC	A
FF	3	REC PAUSE	b
REV	4		
CUE	5		
SLOW	6		
POWER OFF	7		

4.1.3. Explanation of Error code number

The detecting condition and movement of mechanism is displayed.

Fig. 1-5

Indication	Error condition	Remedy/Check
01	CYL PFG pulse can not be detected when the Cylinder starts.	Please check the Cylinder motor, Cylinder drive circuit and CYL PFG signal circuit.
02	CAP FG pulse can not be detected during the Mechanism Initial operation (Tape rewinding by the S-Reel) at DOWN position.	Please check the Capstan motor, Capstan drive circuit and CAP FG signal circuit.
03	Loading Lock during Loading operation at DOWN position.	Please check the Mechanism, Loading Motor, Drive circuit, Drive control signal circuit, Mode Select SW and the Mode Select SW input signal circuit.
04	Loading Lock during Unloading operation at DOWN position.	Please check the Mechanism, Loading Motor, Loading Motor drive circuit, Loading motor drive control signal circuit, Mode Select SW and the Mode Select SW input signal circuit.
05	S-reel pulse can not be detected during Unloading operation.	Please check the Mechanism S-reel system, S-reel sensor, S-reel sensor input signal circuit, Capstan motor, Capstan motor drive circuit, Capstan control signal circuit, and so on.
06	Loading (cassette) Lock during Cassette Up operation.	Please check the Mechanism, Loading motor, Loading motor drive circuit, Loading motor drive control signal circuit, Mode Select SW and the Mode Select SW input signal circuit.
11	Head clog detection.	Clean the Cylinder Head.
14	The position signal from Mode Select SW can not be detected.	Check Mode Select SW contact.
15	CAP FG pulse can not be detected during Cassette in operation.	Please check the Capstan motor, Capstan motor drive circuit and the CAP FG signal circuit.
16	Cylinder Lock	Please check the Cylinder motor, Cylinder motor drive circuit and the CYL HSW signal circuit.
17	S-reel Lock.	Please check Mechanism S-reel system, S-reel sensor, S-reel sensor input signal circuit, Capstan motor, Capstan motor drive circuit, Capstan control signal circuit, and so on.
18	T-reel Lock.	Please check Mechanism T-reel system, T-reel sensor, T-reel sensor input signal circuit, Capstan motor, Capstan motor drive circuit, Capstan control signal circuit, and so on.
80	Eject operation due to error condition.	Please check the Cassette tape, S-photo sensor, S-reel and Capstan system.

4.1.3.1. Reason of Ejection

When an error code is 80, the reason of ejection is displayed on the Light Emitting Diode (LED) display of "TIMER", "VCR" and "HiFi".

Fig. 1-6

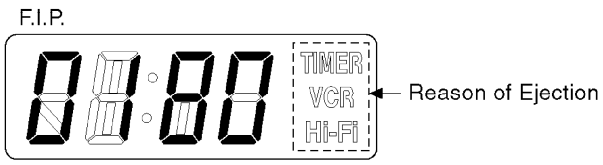


Fig. 1-7

LED Display	Reason of Eject (Error condition)
No Light up	No tape at loading position. (Miss catching the tape by loading post.)
TIMER lighting	Short rewind before loading starts can not be done due to error of S-photo sensor, S-reel, Capstan System.
HiFi lighting	Both ends of tape is detected at down position.

4.1.4. Memory and Clear of Fault Code

- Error code is memorized on EEPROM (IC6004) (latest Error code only).

- Error code is cleared by power on operation after a self-diagnostic display or Memory all clear.

4.2. SERVICE NOTES

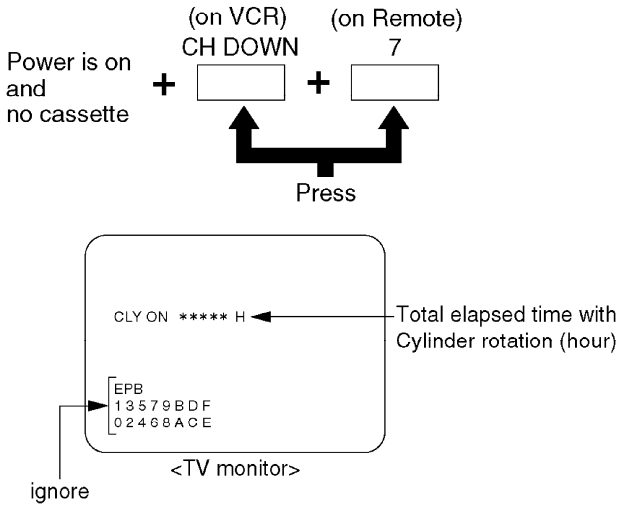
4.2.1. USAGE SCREEN MODE

Function displayed on the TV monitor:

- the total elapsed "Cylinder rotation" time (in hours)

1. With power turned on and no cassette, press CH DOWN button on VCR and 7 key on remote controller together.
(The USAGE SCREEN will be displayed on the TV Monitor.)

Fig. 2



Note:

1. After replacing the Cylinder Unit, press COUNTER RESET button on remote controller in this mode. Total elapsed "Cylinder rotation" time (in hours) will be cleared to 0.

2. To release from Usage Screen Mode, press any operation button on remote controller or insert a cassette tape in this mode. The VCR will return to normal operation mode.

4.2.2. EEPROM IC (IC6004), MAIN C.B.A. REPLACEMENT NOTE

After replacing EEPROM IC (IC6004) or Main C.B.A., be sure to perform the "PG SHIFTER ADJUSTMENT".

NOTE:

Refer to Service Manual for R4-Mechanism Chassis for PV-Model (Order No. MKE0401000C1).

4.2.3. SERVICE POSITION

4.2.3.1. Service Position

Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (2)	Main C.B.A. check

CAUTION:

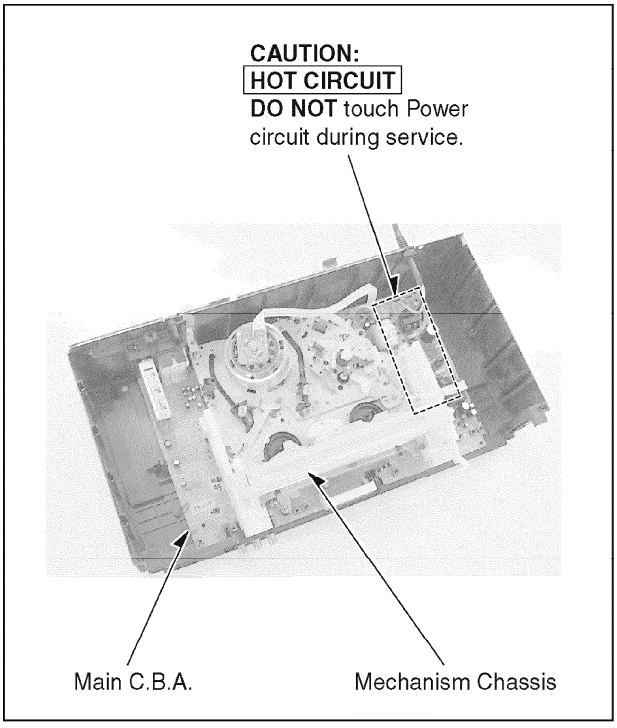
HOT CIRCUIT (Primary circuit) exists on the Main C.B.A. Use extreme care to prevent accidental shock when servicing.

NOTE:

When carring out loading of the cassette tape, if light is strong, a tape may not carry out loading. Please shade a Mechanism Unit top or weaken lighting.

4.2.3.1.1. Service Position (1)

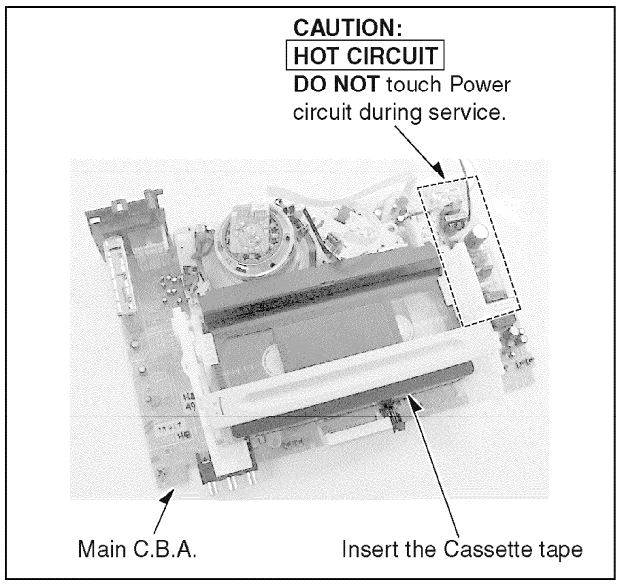
Fig. 3-1



4.2.3.1.2. Service Position (2)

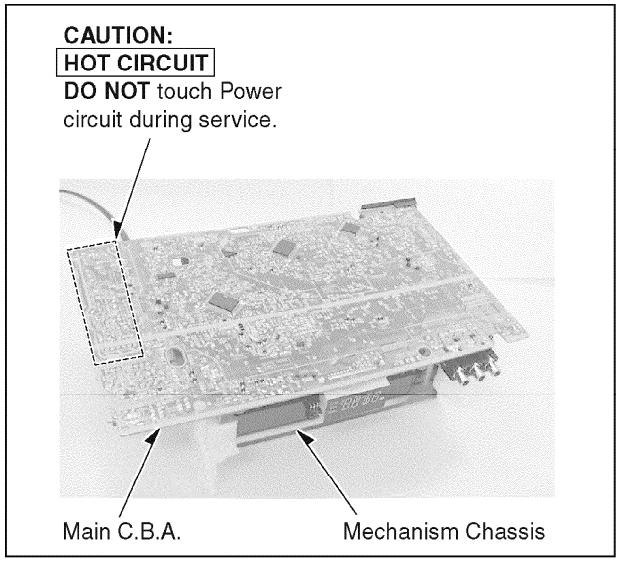
Turn on the power and insert the Cassette tape.

Fig. 3-2-1



After disconnecting the AC cord, turn over the Main C.B.A. and Mechanism Chassis together.

Fig. 3-2-2



4.2.4. HOT CIRCUIT

Primary circuit exists on the Main C.B.A.

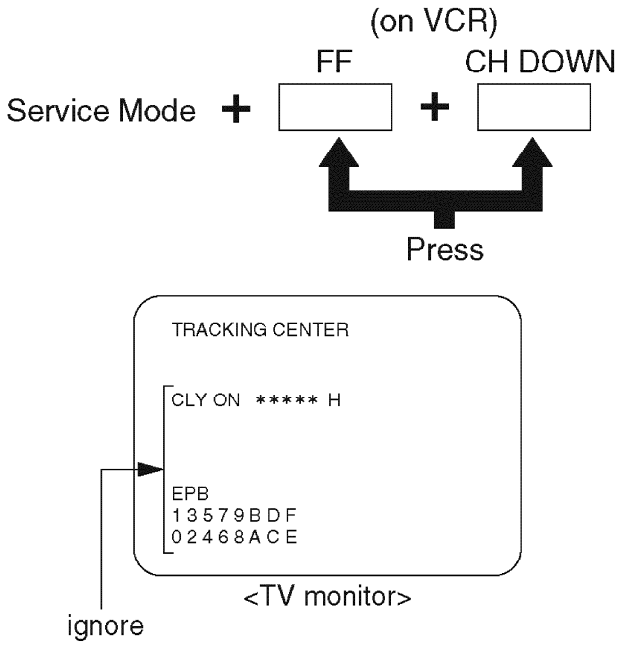
This circuit is identified as " HOT" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

4.2.5. TRACKING CENTER MODE (TRACKING FIX AT CENTER)

Insert the Cassette tape. Set the unit into Service Mode. Press CH UP button and CH DOWN button on VCR together in Play back mode. "TRACKING CENTER" will be displayed on the TV monitor.

In this mode, the tracking is fixed at center. (Auto tracking and manual tracking functions are not operational.)

Fig. 4-1



To release from this mode, press CH UP button and CH DOWN button on VCR together again.

4.2.6. HOW TO RESET ALL VCR MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, no cassette inserted), hold down the PLAY and CH UP buttons on the unit together for more than 5 seconds.
Power will shut off.

4.2.7. HOW TO CONFIRM AUTO CLOCK SET FEATURE

1. **Connect an RF cable from the output of one unit to the input of the test unit.**
2. **Select corresponding RF channels.**
3. **Playback a recording of P.B.S. channel including clock set data and confirm this feature.**

4.2.8. VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury fromelectrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.
Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

4.2.9. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

4.2.10. MODEL NO. IDENTIFICATION MARK

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT

Note:
Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram Notes, for mark "PT."

5. DISASSEMBLY / ASSEMBLY PROCEDURES

5.1. CABINET SECTION

5.1.1. Disassembly Method

STEP No.	Ref No.	PART	REMOVE	NOTE
1	(73)	Top Cover	Screws (447) 2pcs	1
2	(71)	Front Panel Ass'y	Screw (518), Locking Tabs of Front Panel	2
3	-	Main C.B.A. & Mechanism Chassis	Screws (461), (519), (501), (460) 4pcs Locking tabs, Grounding Plate ((270))	
4	(E10)	Main C.B.A.	Screw (511), P6202, Flexible Flat Cables ((751), (752)), Mechanism Chassis (P3501, P4001)	3
	-	Mechanism Chassis		

NOTE:
When reassembling, use the reverse steps.

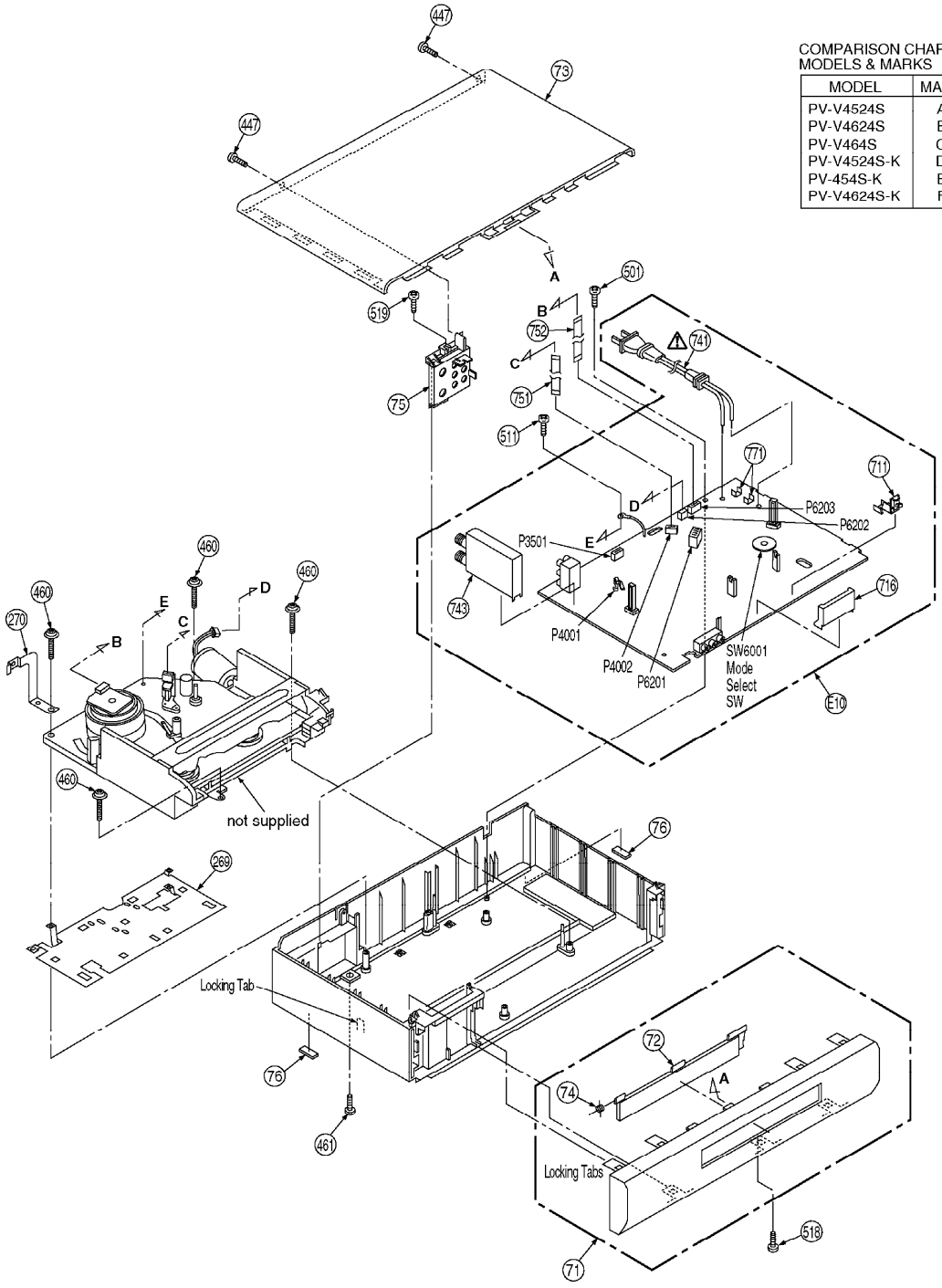
CAUTION:

Disconnect AC plug before disassembly or assembly.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F



5.1.1.1. Notes in chart

1. Installation of Top Cover

Install the Top Cover front portion at a downward angle so that the tab on the Front Panel Assíy fits into the hole in the Top Cover.
Then, lower the rear portion into place and tighten 2 Screws (447).

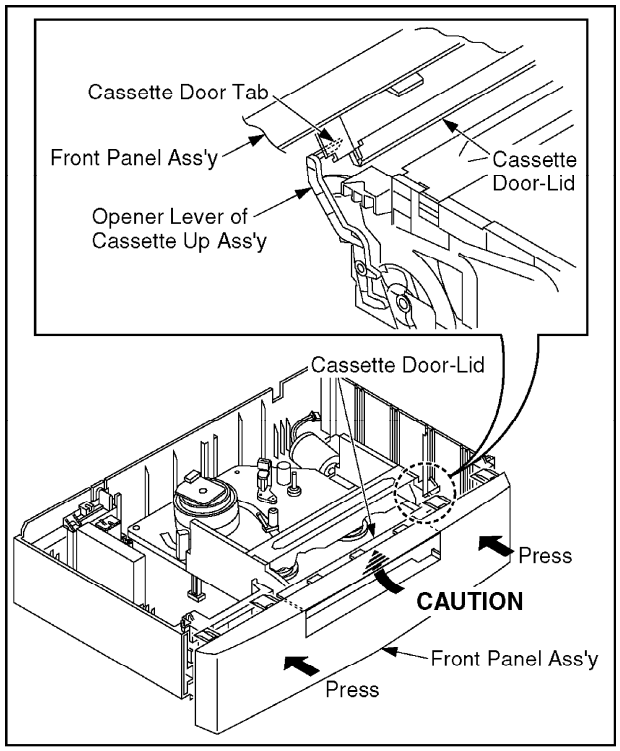
2. Installation of Front Panel Ass'y

CAUTION:

Opener Lever may be damaged when Front Panel Ass'y is installed, with Cassette Door-Lid of Front Panel Ass'y and Opener Lever of Cassette Up Ass'y set incorrectly.

1. **When installing the Front Panel Ass'y, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.**
2. **Make sure that all locking tabs are aligned properly. Then, press the Front Panel straight in.**

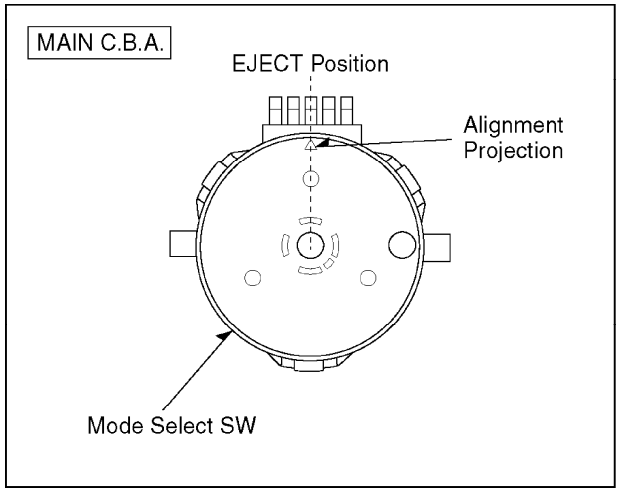
Fig. D1



3. Installation of Mechanism Chassis and Cassette Up Ass'y onto Main C.B.A.

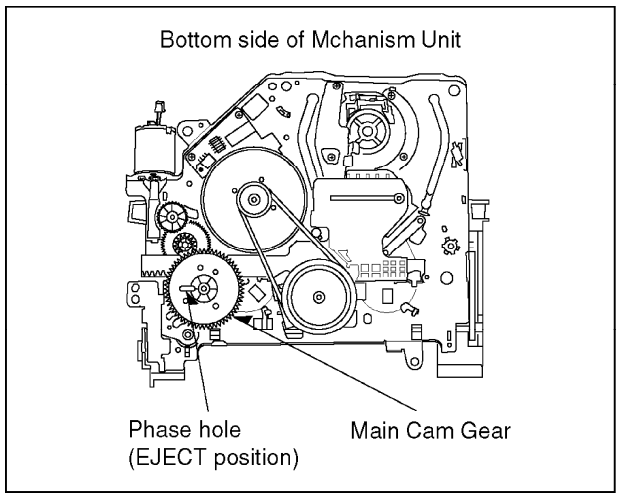
A. Make sure the Mode Select SW. on the Main C.B.A. is in EJECT position. If not, rotate the Mode Select SW. until the alignment projection is in the EJECT Position.

Fig. D2



B. Make sure the phase hole of the Main Cam Gear on the bottom side of Mechanism Unit is in EJECT position.

Fig. D3



C. Install the Mechanism Chassis straight onto the Main C.B.A. so that the Sensor LED clears the hole in the Mechanism Chassis and that 3 Connectors (P3501, P4001, P6201) are aligned and seated securely.

5.2. MECHANISM SECTION

Refer to the Service Manual for R4-Mechanism Chassis for PV-Model (Order No. MKE0401000C1).

6. SCHEMATIC DIAGRAMS

6.1. SCHEMATIC DIAGRAM & CIRCUIT BOARD LAYOUT NOTES

6.2. MAIN SCHEMATIC DIAGRAMS

6.3. INTERCONNECTION SCHEMATIC DIAGRAM

6.4. VOLTAGE CHART

6.5. SIGNAL WAVEFORMS

7. CIRCUIT BOARD LAYOUT

7.1. MAIN C. B. A.

8. BLOCK DIAGRAMS

8.1. OVERALL BLOCK DIAGRAM

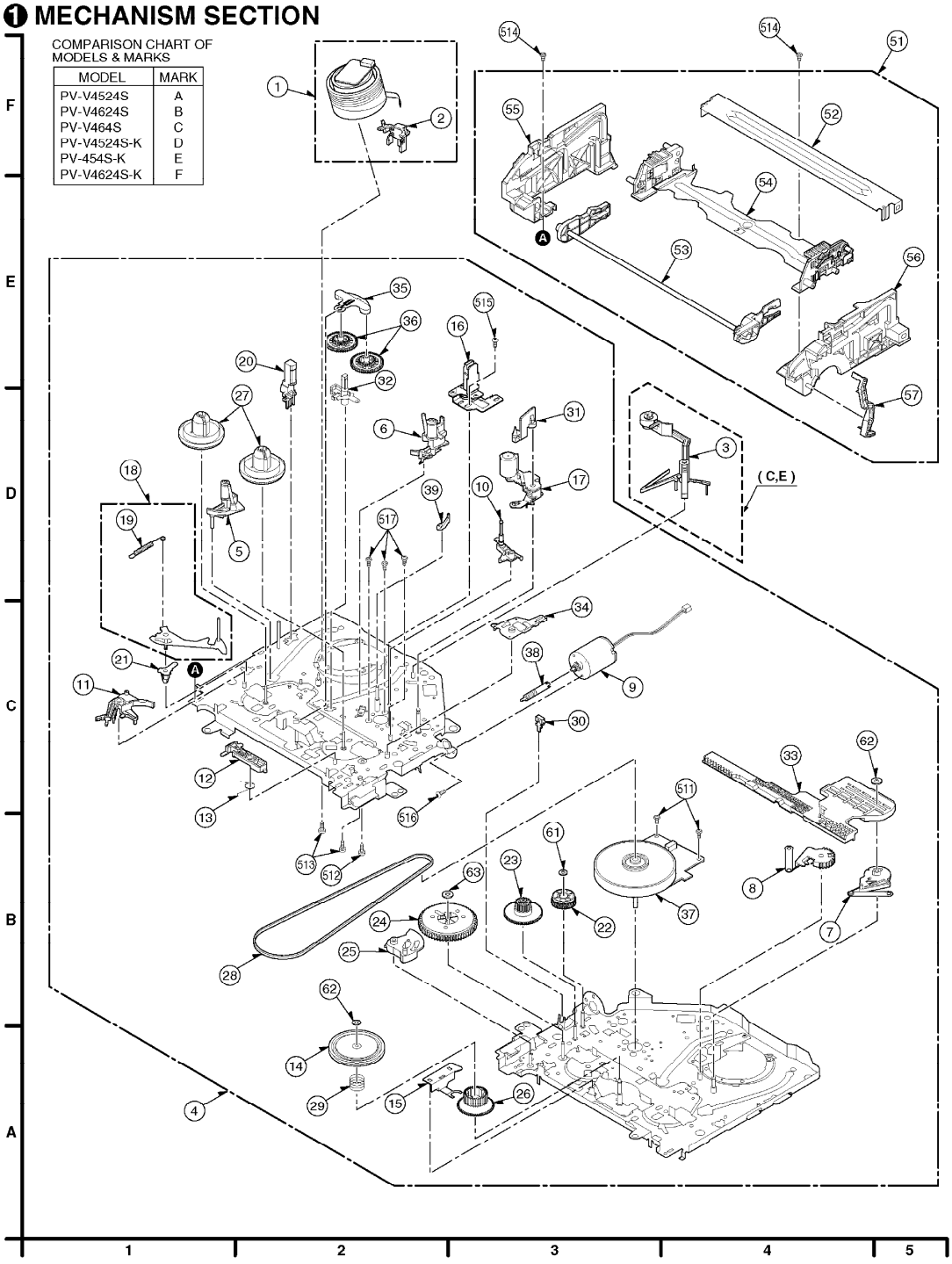
9. EXPLODED VIEWS

9.1. MECHANISM SECTION

❶ MECHANISM SECTION

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F



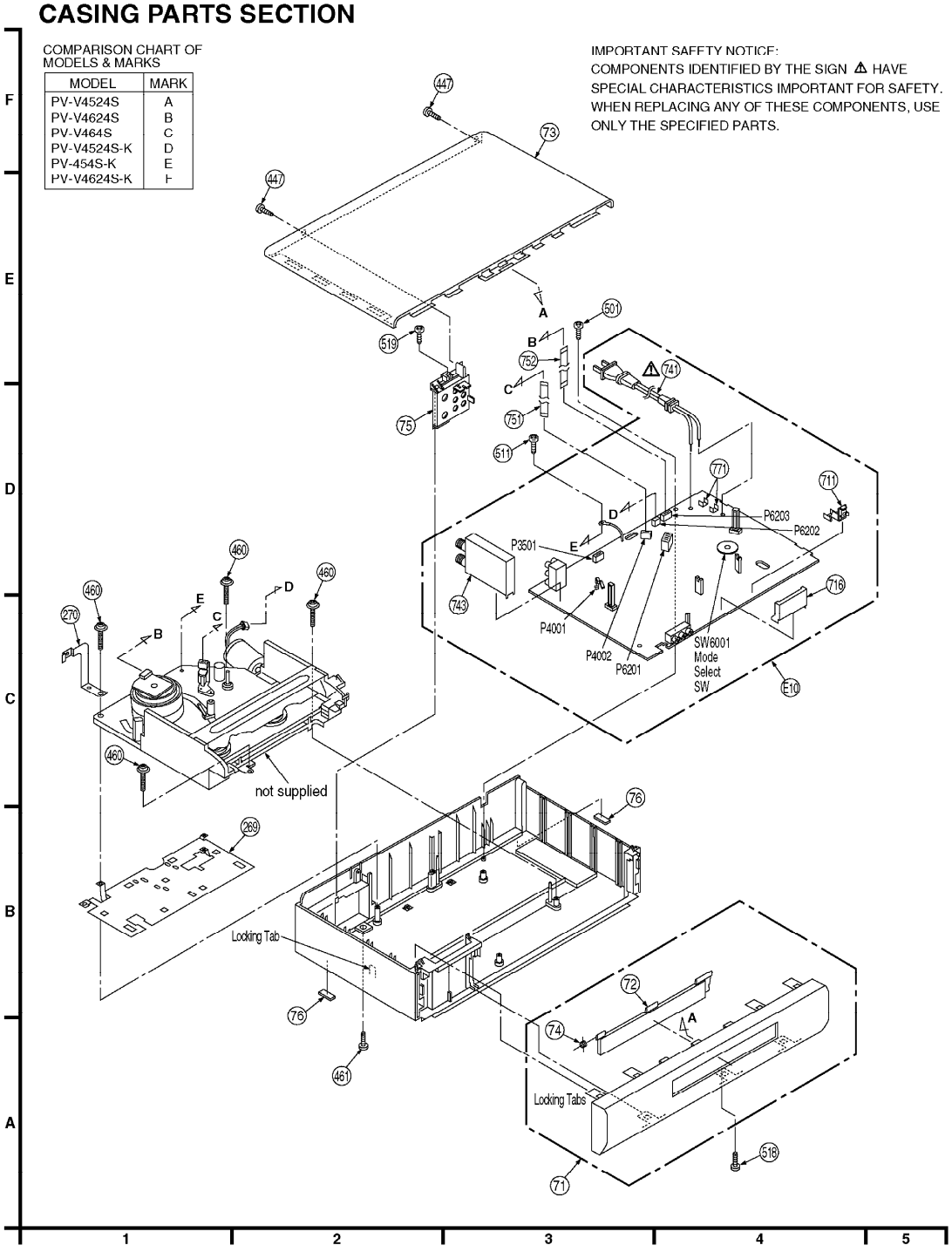
9.2. CHASSIS FRAME AND CASING PARTS SECTION

❷ CHASSIS FRAME AND CASING PARTS SECTION

COMPARISON CHART OF MODELS & MARKS

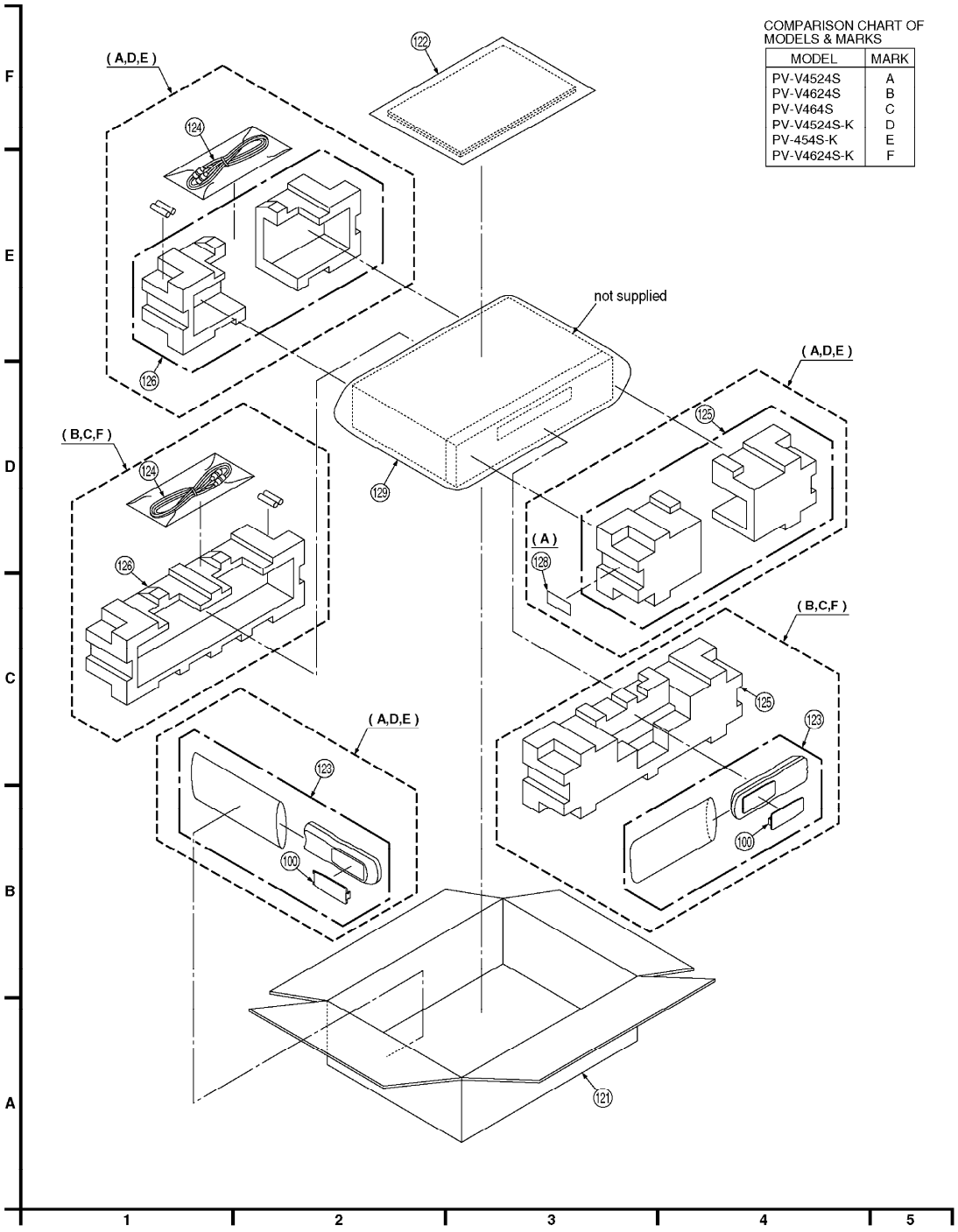
MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.



9.3. PACKING PARTS AND ACCESSORIES SECTION

❸ PACKING PARTS AND ACCESSORIES SECTION



10. REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

10.1. REPLACEMENT NOTES

10.1.1. General Notes

1. Use only original replacement parts:

To maintain original function and reliability of repaired units, use only

original replacement parts which are listed with their part numbers in the parts list.

2. **IMPORTANT SAFETY NOTICE**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. **SPECIAL NOTE**
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this servicemanual.
4. **Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.**
5. **Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.**
6. **Definition of Parts supplier:**
   A. Parts with mark "MKE" in the Remarks column are supplied from MKE.
   B. Parts without mark in the Remarks column are supplied from MKI.
7. **Item numbers with capital letter E (Example: E10, E20, ...) in the Ref. No. column are shown in the exploded views.**
8. **Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.**

10.1.2. Mechanical Replacement Notes

1. **Section No. of parts shown in Exploded Views are indicated in the Remarks column.**
2. **The Mechanical Chassis Sub Ass'y (Ref. No. 4) consists of all the mechanical parts except the Cylinder Kit (Ref. No. 1), and the Cassette Up Ass'y (Ref. No. 51) and Cleaner Arm Unit (Ref. No.3).**
   After replacing the Mechanical Chassis Sub Ass'y, be sure to perform "TAPE INTERCHANGEABILITY ADJUSTMENT" in Service Manual for R4 -Mechanism Chassis for PV-Model (Order No. MKE0401000C1).
3. **Cylinder is supplied as a Cylinder Kit (Ref. No. 1) only. Cylinder Kit**

consists of a Cylinder and a Main FPC Holder (Ref. No.2). However, FPC Holder (Ref. No.2) is available separately as a replacement part.

4. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit.

5. FPC Holder (Ref. No. 2) is not reusable. If removed, install a new one.

10.1.3. Electrical Replacement Notes

1. Unless otherwise specified;
All resistors are in Ω, K = 1,000 Ω, M = 1,000 k Ω.

2. Abbreviation

RTL:	**Retention Time Limited** **This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.**
NR	**Non Repairable Board Ass'y**
MGF CHIP:	**Metal Glaze Film Chip**
C CHIP:	**Ceramic Chip**
COMPLX CMP:	**Complex Component**
W FLMPRF:	**Wirewound Flameproof**
C.B.A.:	**Circuit Board Assembly**
P.C.B.:	**Printed Circuit Board**
E.S.D.:	**Electrostatically Sensitive Devices**

3. When replacing 0 .resistor, a wire can be substituted for it.

4. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. 743) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATORUNIT replacement part is available as a complete assembly unit only.

5. EEP ROM IC (IC6004), MAIN C.B.A. replacement note:
After replacing EEP ROM IC (IC6004) or MAIN C.B.A., be sure to perform the "PG SHIFTER ADJUSTMENT" in Service Manual for R4-Mechanism Chassis for PV-Model (Order No. MKE0401000C1).

10.2. MECHANICAL REPLACEMENT PARTS LIST

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

Definition of Parts supplier:

1. Parts with mark “MKE” in the Remarks column are supplied from MKE.

2. Parts without mark in the Remarks column are supplied from MKI.

MECHANICAL REPLACEMENT PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
1	LSVD0009	CYLINDER KIT	1
2	VMD4983	FPC HOLDER	1
3	VXL3131	CLEANER ARM UNIT (C,E)	1
4	LSXY0542	MECHANICAL CHASSIS SUB ASS'Y (A,B,D,F)	1 RTL
4	LSXY0579	MECHANICAL CHASSIS SUB ASS'Y (C,E)	1 RTL
5	VXA7105	SUPPLY SHAFT HOLDER UNIT	1
6	VXA7106	TAKE UP SHAFT HOLDER UNIT	1
7	VXL3107	SUPPLY LOADING ARM UNIT	1
8	VXL3108	TAKE UP LOADING ARM UNIT	1
9	VEM0796	LOADING MOTOR UNIT	1
10	VXL3110	P5 ARM UNIT	1
11	VXL3112	SUPPLY BRAKE ARM UNIT	1
12	VXL3121	T BRAKE ARM UNIT	1
13	VMB3548	T BRAKE SPRING	1
14	VXP2133	CENTER CLUTH UNIT	1
15	VXL3124	CHANGING LEVER UNIT	1
16	LSEH0008	AUDIO CONTROL/ERASE HEAD UNIT	1
17	VXL3109	PINCH ARM UNIT	1
18	VXL3111	TENSION ARM UNIT	1
19	VMB3547	TENSION SPRING	1
20	L1AZ00000004	FULL ERASE HEAD	1
21	VDB1431	TENSION ARM BOSH	1
22	VXP2168	TORQUE CLUTCH UNIT	1
23	VDG1510	INTERMEDIATE GEAR	1
24	VDG1511	MAIN CAM GEAR	1
25	VXA7311	SECTOR GEAR UNIT	1
26	VDG1514	CHANGE GEAR	1
27	VDR0372	REEL TABLE	1
28	VDV0391	CAPSTAN BELT	1

Ref. No.	Part No.	Part Name & Description	Remarks
29	VMB3550	CHANGING GEAR SPRING	1
30	VMD4987	WORM BEARING 2	1
31	VMD4252	OPENER PIECE	1
32	VMD4253	LED PRISM	1
33	VML3624	MAIN LEVER	1
34	VML3626	PINCH CHARGE ARM	1
35	VML3632	IDLER ARM	1
36	VDG1512	IDLER GEAR	1
37	VEM0800	CAPSTAN ASS'Y	1
38	VDG1637	WORM GEAR 2	1
39	VMX3377	P4 CAP 2	1
51	LSXY0541	CASSETTE UP ASS'Y	1
52	VMA0L25	TOP PLATE	1
53	VXL3160	MAIN SHAFT UNIT	1
54	VXA7110	CASSETTE HOLDER UNIT	1
55	VMD4255	SIDE PLATE L	1
56	VMD4985	SIDE PLATE R2	1
57	LSML0367	OPENER LEVER 2	1
61	VMX2208	CUT WASHER,NYLON	1
62	VMX3196	CUT WASHER,NYLON	1
63	VMX2699	CUT WASHER,NYLON	1
71	VYPS7157	FRONT PANEL ASS'Y (A,D)	2
71	VYPS7161	FRONT PANEL ASS'Y (B,C,F)	2
71	VYPS7167	FRONT PANEL ASS'Y (E)	2
72	VYPS7159	CASSETTE DOOR-LID UNIT	2
73	LSKM1036	TOP COVER (A,D,E)	2
73	LSKM1039	TOP COVER (B,C,F)	2
74	VMBS1161	CASSETTE DOOR SPRING	2
75	LSGP0382	REAR PANEL	2
76	LSKA0012	RUBBER FOOT	2
100	EUR77EC2406A	BATTERY COVER (A,C,D,E)	3
100	EUR77EC0903B	BATTERY COVER (B,F)	3
121	LSPG1631	PACKING CASE,PAPER (A)	3
121	LSPG1655	PACKING CASE,PAPER (B)	3
121	LSPG1690	PACKING CASE,PAPER (C)	3
121	LSPG1727	PACKING CASE,PAPER (D)	3
121	LSPG1726	PACKING CASE,PAPER (E)	3
121	LSPG1728	PACKING CASE,PAPER (F)	3
122	LSQF0761	FAN BAG (A)	3
122	LSQF0765	FAN BAG (B)	3
122	LSQF0813	FAN BAG (C)	3
122	LSQF0815	FAN BAG (D)	3
122	LSQF0819	FAN BAG (E)	3
122	LSQF0823	FAN BAG (F)	3
123	EUR7723KA0	INFRARED REMOTE CONTROL UNIT (A,C,D,E)	3
123	LSSQ0407	INFRARED REMOTE CONTROL (B,F)	3
124	LSJA0418	VHF CONNECTING CABLE W/PLUG,0V	3
124	LSJA0274	VHF CONNECTING CABLE W/PLUG,0V	3
124	LSJA0328	VHF CONNECTING CABLE W/PLUG,0V	3
124	LSJA0372	VHF CONNECTING CABLE W/PLUG,0V	3
124	VJAS0212	VHF CONNECTING CABLE W/PLUG,0V	3
125	LSPN0209	FRONT CUSHION,STYROFOAM (A,D,E)	3
125	LSPN0459	FRONT CUSHION,STYROFOAM (B,C,F)	3
126	LSPN0210	REAR CUSHION,STYROFOAM (A,D,E)	3
126	LSPN0460	REAR CUSHION,STYROFOAM (B,C,F)	3
128	N9ZZ00000027	SECURITY TAG (A)	3
129	LSPF0056	SHEET,POLYETHYLENE	3

Ref. No.	Part No.	Part Name & Description	Remarks
269	LSSC0677	GROUNDING PLATE	2
270	LSSC0678	GROUNDING ANGLE	2
447	VHDS0310	SCREW,STEEL	2
460	XTV4+12A	TAPPING SCREW,STEEL	2
461	VHDS0460	SCREW,STEEL	2
501	LSHD0074	SCREW,STEEL	2
511	XTV26+5F	TAPPING SCREW,STEEL	1,2
512	VHD1095	SCREW,STEEL	1
513	VHD1117	SCREW,STEEL	1
514	XTV26+8FR	TAPPING SCREW,STEEL	1
515	VHD1044	SCREW,STEEL	1
516	XSN3+35	SCREW,STEEL	1
517	XTN26+7J	SCREW,STEEL	1
518	XTB3+6JFN	SCREW,STEEL	2
519	XTV3+12G	TAPPING SCREW,STEEL	2
711	LSSZ0007	INFRARED RECEIVER UNIT	2
716	B3CJZ0000004	LED DISPLAY PANEL	2
741	LSJA0360	AC CORD W/PLUG,AC 120V	2 ⚠
741	LSJA0348	AC CORD W/PLUG,AC 120V	2 ⚠
741	LSJA0358	AC CORD W/PLUG,AC 120V	2 ⚠
741	LSJA0359	AC CORD W/PLUG,AC 120V	2 ⚠
741	LSJA0361	AC CORD W/PLUG,AC 120V	2 ⚠
743	ENG56D01G1F	TUNER UHF/VHF NR (A,B,C)	2
743	J3AAADB00001	TUNER UHF/VHF NR(D,E,F)	2
751	LSJW0060	FLEXIBLE FLAT CABLE W/OUT PLUG	2
752	LSJW0061	FLEXIBLE FLAT CABLE W/OUT PLUG	2
771	EYF52BC	FUSE HOLDER	2
E10	LSEP2131HA	MAIN C.B.A. (A)	2 RTL
E10	LSEP2131HB	MAIN C.B.A. (B,C)	2 RTL
E10	LSEP2131HD	MAIN C.B.A. (D)	2 RTL
E10	LSEP2131HF	MAIN C.B.A. (E)	2 RTL
E10	LSEP2131HE	MAIN C.B.A. (F)	2 RTL

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFMS0003H6	VHS ALIGNMENT TAPE	MKE
	VFKS0081	GREASE	MKE
	VFK0329	POST ADJUSTMENT DRIVER	MKE
	VFK27	HEAD CLEANING STICK	MKE
	VFK0330	H-POSITION ADJUSTMENT DRIVER	MKE
	VFK1301	SILICONE GREAS	MKE

10.3. ELECTRICAL REPLACEMENT PARTS LIST

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

Definition of Parts supplier:

1. All parts are supplied from MKI.

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP2131HA	MAIN C.B.A. (A)	E.S.D. RTL
E10	LSEP2131HB	MAIN C.B.A. (B,C)	E.S.D. RTL
E10	LSEP2131HD	MAIN C.B.A. (D)	E.S.D. RTL
E10	LSEP2131HF	MAIN C.B.A. (E)	E.S.D. RTL
E10	LSEP2131HE	MAIN C.B.A. (F)	E.S.D. RTL

10.3.1. MAIN C.B.A.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	CNC1S101R1KT	IC, LINEAR	⚠
IC1001	CNC1S101S1KT	IC, LINEAR	⚠
IC1001	PS2501-1-X	IC, LINEAR	⚠
IC1002	C0DAEMZ00005	IC, LINEAR	
IC1002	B1AZKD000001	IC, LINEAR	
IC1002	C0DAEMZ00001	IC, LINEAR	
IC3001	C1AB00002002	IC, LINEAR	
IC4201	AN3663FBP-V	IC, LINEAR	
IC6001	C2CBHF000329	IC,16BIT MICROCONTROLLER	E.S.D.
IC6002	B3NAA0000049	PHOTO INTERRUPUTER	
IC6003	B3NAA0000049	PHOTO INTERRUPUTER	
IC6004	LSEQ0716	IC, 1K EEP ROM	E.S.D.
IC6005	C0EBH0000172	IC, CMOS STANDARD LOGIC	E.S.D.
IC6201	C1AB00001767	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	B1DEEQ000001	TRANSISTOR FET	⚠
Q1001	B1DEEQ000006	TRANSISTOR FET	⚠
Q1002	2SC3311AHA	TRANSISTOR SI PNP	
Q1003	2SC3311AHA	TRANSISTOR SI PNP	
Q1201	UNR211200L	TRANSISTOR SI PNP CHIP	
Q1201	DTA124EK-TX	TRANSISTOR SI PNP CHIP	
Q1202	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q1202	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1203	B1ABGC000001	TRANSISTOR SI NPN CHIP	
Q1203	B1ABGC000003	TRANSISTOR SI NPN CHIP	
Q1204	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q1204	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1205	B1BACC000010	TRANSISTOR SI NPN	
Q1205	2SD1581-T	TRANSISTOR SI NPN	
Q1206	2SD235800A	TRANSISTOR SI NPN	
Q1206	B1AAQB000002	TRANSISTOR SI NPN	
Q1207	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q1207	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1208	B1BACC000010	TRANSISTOR SI NPN	
Q1208	2SD1581-T	TRANSISTOR SI NPN	
Q1209	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q1209	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1213	UNR211200L	TRANSISTOR SI PNP CHIP	
Q1213	DTA124EK-TX	TRANSISTOR SI PNP CHIP	
Q1214	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q1214	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q1215	B1ABGC000001	TRANSISTOR SI NPN CHIP	
Q1215	B1ABGC000003	TRANSISTOR SI NPN CHIP	
Q1216	2SD0601AHL	TRANSISTOR SI NPN CHIP	
Q1216	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3001	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q3001	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q3001	B1ABCF000106	TRANSISTOR SI NPN CHIP	
Q3001	B1ABCF000107	TRANSISTOR SI NPN CHIP	
Q3003	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3003	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3003	B1ADCF000077	TRANSISTOR SI PNP CHIP	

Ref. No.	Part No.	Part Name & Description	Remarks
Q3003	B1ADCF000078	TRANSISTOR SI PNP CHIP	
Q3005	2SD1819AHL	TRANSISTOR SI NPN CHIP	
Q3005	B1ABCF000020	TRANSISTOR SI NPN CHIP	
Q3014	UNR221300L	TRANSISTOR SI NPN CHIP	
Q3014	B1GBCFNN0004	TRANSISTOR SI NPN CHIP	
Q3202	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q3202	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q3202	B1ADCF000077	TRANSISTOR SI PNP CHIP	
Q3202	B1ADCF000078	TRANSISTOR SI PNP CHIP	
Q4081	UNR211100L	TRANSISTOR SI PNP CHIP	
Q4081	B1GDCFJJ0002	TRANSISTOR SI PNP CHIP	
Q4082	2SD1819AHL	TRANSISTOR SI NPN CHIP	
Q4083	2SD1819AHL	TRANSISTOR SI NPN CHIP	
Q4101	2SD0601ARL	TRANSISTOR SI NPN CHIP	
Q4172	UNR221100L	TRANSISTOR SI NPN CHIP	
Q4172	DTC114EK-TX	TRANSISTOR SI NPN CHIP	
Q6001	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6001	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6002	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6002	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6003	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6003	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6004	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6004	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6005	2SB0709A0L	TRANSISTOR SI PNP CHIP	
Q6005	B1ADCF000001	TRANSISTOR SI PNP CHIP	
Q6006	VEKS9440	PHOTO SENSOR UNIT	
Q6007	VEKS9440	PHOTO SENSOR UNIT	
Q6008	2SD0601A0L	TRANSISTOR SI NPN CHIP	
Q6008	B1ABCF000011	TRANSISTOR SI NPN CHIP	
Q6009	2SB0709AHL	TRANSISTOR SI PNP CHIP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1001	B0EBKR000030	DIODE SI	⚠
D1002	B0HAHP000014	DIODE SI	
D1002	B0HAJP000007	DIODE SI	
D1002	B0HAMP000061	DIODE SI	
D1002	B0HAMP000069	DIODE SI	
D1004	MAZ40360MF	DIODE ZENER 3.6V	
D1005	MA2C165001VT	DIODE SI	
D1005	B0AACK000004	DIODE SI	
D1005	1SS119	DIODE SI	
D1006	MA2C18500E	DIODE SI	
D1007	B0HAHP000014	DIODE SI	
D1007	B0HAJP000007	DIODE SI	
D1007	B0HAMP000061	DIODE SI	
D1007	B0HAMP000069	DIODE SI	
D1008	B0JAMD000012	DIODE SI	
D1008	B0JAGE000001	DIODE SI	
D1008	B0JAME000082	DIODE SI	
D1009	B0JAME000079	DIODE SI	
D1009	B0JAME000049	DIODE SI	
D1009	B0JANE000011	DIODE SI	
D1009	B0JANE000022	DIODE SI	
D1010	B0JANG000006	DIODE SI	
D1011	MAZ22000A	DIODE ZENER 20V	⚠
D1012	ERZV07Z361CS	VARISTORS	⚠
D1013	B0HAHP000014	DIODE SI	
D1013	B0HAJP000007	DIODE SI	
D1013	B0HAMP000061	DIODE SI	
D1013	B0HAMP000069	DIODE SI	
D1201	MAZ4047NMF	DIODE ZENER 4.7V	
D1202	B0AAML000001	DIODE SI	
D1202	B0EAKL000008	DIODE SI	
D1204	B0AAML000001	DIODE SI	
D1204	B0EAKL000008	DIODE SI	
D1205	MAZ4110NHF	DIODE ZENER 11V	
D1206	MAZ4047NMF	DIODE ZENER 4.7V	
D1207	MAZ4120NLF	DIODE ZENER 12V	
D4201	MA2C165001VT	DIODE SI	
D4201	B0AACK000004	DIODE SI	
D4201	1SS119	DIODE SI	
D4202	MA2C165001VT	DIODE SI	
D4202	B0AACK000004	DIODE SI	
D4202	1SS119	DIODE SI	
D4203	MA2C165001VT	DIODE SI	
D4203	B0AACK000004	DIODE SI	
D4203	1SS119	DIODE SI	
D4204	MA2C165001VT	DIODE SI	
D4204	B0AACK000004	DIODE SI	
D4204	1SS119	DIODE SI	
D4205	MA2C165001VT	DIODE SI (A,B,C,D,F)	
D4205	B0AACK000004	DIODE SI (A,B,C,D,F)	
D4205	1SS119	DIODE SI (A,B,C,D,F)	
D4206	MA2C165001VT	DIODE SI (A,B,C,D,F)	
D4206	B0AACK000004	DIODE SI (A,B,C,D,F)	
D4206	1SS119	DIODE SI (A,B,C,D,F)	
D4207	MA2C165001VT	DIODE SI (A,B,C,D,F)	
D4207	B0AACK000004	DIODE SI (A,B,C,D,F)	

Ref. No.	Part No.	Part Name & Description	Remarks
D4207	1SS119	DIODE SI (A,B,C,D,F)	
D4208	MA2C165001VT	DIODE SI (A,B,C,D,F)	
D4208	B0AACK000004	DIODE SI (A,B,C,D,F)	
D4208	1SS119	DIODE SI (A,B,C,D,F)	
D4209	MA2C165001VT	DIODE SI	
D4209	B0AACK000004	DIODE SI	
D4209	1SS119	DIODE SI	
D6001	B3EA00000072	SENSOR LED	
D6002	MA2C165001VT	DIODE SI	
D6002	B0AACK000004	DIODE SI	
D6002	1SS119	DIODE SI	
D6201	MA2C165001VT	DIODE SI	
D6201	B0AACK000004	DIODE SI	
D6201	1SS119	DIODE SI	
D6202	MA2C165001VT	DIODE SI	
D6202	B0AACK000004	DIODE SI	
D6202	1SS119	DIODE SI	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	VRESC2TK275	CARBON 1/2W 2.7M	⚠
R1001	VRESC2TK275C	CARBON 1/2W 2.7M	⚠
R1001	VRESC2TK275T	CARBON 1/2W 2.7M	⚠
R1002	ERX1SJR33P	METAL OXIDE 1W 0.33	
R1003	ERDS2TJ334T	CARBON 1/4W 330K	
R1004	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R1006	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R1007	ERDS2TJ105T	CARBON 1/4W 1M	
R1008	ERDS2TJ105T	CARBON 1/4W 1M	
R1009	ERG2SJ331H	METAL OXIDE 2W 330	
R1010	ERDS2TJ272	CARBON 1/4W 2.7K	
R1011	ERJ6GEYJ471V	MGF CHIP 1/10W 470	
R1012	ERJ6GEYJ4R7V	MGF CHIP 1/10W 4.7	
R1013	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1014	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R1015	ERD25FJ100P	CARBON 1/4W 10	⚠
R1015	ERD25FPJ100P	CARBON 1/4W 10	⚠
R1015	VRESF4FJ100P	CARBON 1/4W 10	⚠
R1016	ERDS2T0	CARBON 1/4W 0	
R1017	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1018	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R1020	D0HD222ZA002	MGF CHIP 2.2K	
R1021	D1BD2431A016	MGF CHIP 2.43K	
R1025	ERDS2T0	CARBON 1/4W 0	
R1201	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1202	ERDS2TJ123T	CARBON 1/4W 12K	
R1203	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R1204	ERDS2TJ331	CARBON 1/4W 330	
R1205	ERDS2TJ153	CARBON 1/4W 15K	
R1206	ERDS2TJ153	CARBON 1/4W 15K	
R1207	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	
R1208	ERDS2TJ153	CARBON 1/4W 15K	
R1209	ERDS2TJ153	CARBON 1/4W 15K	

Ref. No.	Part No.	Part Name & Description	Remarks
R1210	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1212	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R1215	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1216	ERDS2TJ123T	CARBON 1/4W 12K	
R1217	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R3001	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R3002	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R3003	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R3004	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R3005	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R3006	ERDS2TJ152	CARBON 1/4W 1.5K	
R3007	ERDS2TJ152	CARBON 1/4W 1.5K	
R3012	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R3013	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R3014	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R3015	ERJ3GEYJ750V	MGF CHIP 1/16W 75 (A,B,C,D,F)	
R3015	ERJ3GEY0R00V	MGF CHIP 1/16W 0 (E)	
R3016	ERDS2TJ750T	CARBON 1/4W 75	
R3018	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R3020	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R3021	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R3022	ERJ3GEYJ681V	MGF CHIP 1/16W 680	
R3023	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R3024	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R3029	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R3031	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R3032	ERJ3GEYJ685V	MGF CHIP 1/16W 6.8M	
R3033	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R3037	ERJ3GEYJ181V	MGF CHIP 1/16W 180	
R3039	ERDS2TJ680T	CARBON 1/4W 68	
R3041	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R3051	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R3052	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R3053	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4011	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4012	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R4015	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R4018	ERJ3EKF1002V	MGF CHIP 1/16W 10K	
R4061	ERJ3GEYJ334V	MGF CHIP 1/16W 330K	
R4062	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R4063	ERJ3GEYJ271V	MGF CHIP 1/16W 270	
R4071	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R4073	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4074	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4075	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4076	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4081	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4084	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4085	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4101	ERJ3GEYJ124V	MGF CHIP 1/16W 120K	
R4102	ERJ3GEYJ183V	MGF CHIP 1/16W 18K	
R4103	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R4201	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R4202	ERJ3GEYJ473V	MGF CHIP 1/16W 47K	
R4203	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4204	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	
R4205	ERJ3GEYJ473V	MGF CHIP 1/16W 47K (A,B,C,D,F)	

Ref. No.	Part No.	Part Name & Description	Remarks
R4206	ERJ3GEYJ473V	MGF CHIP 1/16W 47K (A,B,C,D,F)	
R4207	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K (A,B,C,D,F)	
R4208	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K (A,B,C,D,F)	
R4209	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4210	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4213	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4214	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4218	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R4224	ERJ3GEYJ333V	MGF CHIP 1/16W 33K	
R4225	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R4226	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R4227	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4228	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4230	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4231	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R4234	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R4235	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R4453	ERJ3GEYJ393V	MGF CHIP 1/16W 39K	
R4455	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R4601	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R4903	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R6001	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6002	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6003	ERJ3GEYJ272V	MGF CHIP 1/16W 2.7K	
R6004	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R6006	ERDS2TJ151T	CARBON 1/4W 150	
R6007	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6008	ERJ3GEYJ183V	MGF CHIP 1/16W 18K	
R6009	ERJ3GEYJ391V	MGF CHIP 1/16W 390	
R6010	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6011	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6012	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6015	ERDS2TJ560T	CARBON 1/4W 56	
R6016	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6017	ERJ3GEYJ475V	MGF CHIP 1/16W 4.7M	
R6018	ERJ3GEYJ332V	MGF CHIP 1/16W 3.3K	
R6019	ERJ3GEYJ152V	MGF CHIP 1/16W 1.5K	
R6020	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6021	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6023	ERJ3GEYJ332V	MGF CHIP 1/16W 3.3K	
R6024	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6025	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6026	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6027	ERDS2TJ121T	CARBON 1/4W 120	
R6029	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6030	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6031	ERJ3GEYJ273V	MGF CHIP 1/16W 27K	
R6033	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6034	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6035	ERJ3GEYJ561V	MGF CHIP 1/16W 560	
R6036	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R6037	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6038	ERJ3GEYJ471V	MGF CHIP 1/16W 470	
R6040	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6041	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	
R6044	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6045	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6046	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6049	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6050	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6051	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6053	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6056	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R6057	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6058	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6059	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6060	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6061	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6062	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6064	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6065	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6066	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R6067	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6068	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6069	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6070	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6071	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6072	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R6074	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6075	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R6077	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R6082	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R6083	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R6084	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R6087	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	
R6090	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6091	ERJ3EKF1002V	MGF CHIP1/16W 10K	
R6092	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6094	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6095	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6096	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R6097	ERJ3EKF2202V	PRECISION METAL FILM 1/16W 22K	
R6098	ERJ3GEYJ472V	MGF CHIP 1/16W 4.7K	
R6100	ERJ3GEYJ153V	MGF CHIP 1/16W 15K	
R6102	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6103	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	
R6104	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
R6108	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R6201	ERJ3GEYJ682V	MGF CHIP 1/16W 6.8K	
R6202	ERJ3GEYJ105V	MGF CHIP 1/16W 1M	
R6203	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6204	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	
R6205	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6206	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6207	ERDS2TJ473T	CARBON 1/4W 47K	
R6208	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6209	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6210	ERJ3GEYJ221V	MGF CHIP 1/16W 220	
R6211	ERJ3GEYJ1R2V	MGF CHIP 1/16W 1.2	
R6212	ERJ3GEYJ1R5V	MGF CHIP 1/16W 1.5	
R6213	ERJ3GEYJ101V	MGF CHIP 1/16W 100	
R6214	ERJ3GEYJ183V	MGF CHIP 1/16W 18K	
R6215	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	
R6216	ERJ3GEYJ101V	MGF CHIP 1/16W 100	

Ref. No.	Part No.	Part Name & Description	Remarks
R6302	ERDS2TJ3R3	CARBON 1/4W 3.3	
R6303	ERDS2TJ470	CARBON 1/4W 47	
R6310	ERJ3GEYJ182V	MGF CHIP 1/16W 1.8K	
R6311	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R6313	ERJ3GEYJ182V	MGF CHIP 1/16W 1.8K	
R6314	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R6315	ERJ3GEYJ123V	MGF CHIP 1/16W 12K	
R6316	ERJ3GEYJ182V	MGF CHIP 1/16W 1.8K	
R6317	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R6319	ERJ3GEYJ182V	MGF CHIP 1/16W 1.8K	
R6320	ERJ3GEYJ392V	MGF CHIP 1/16W 3.9K	
R6321	ERJ3GEYJ123V	MGF CHIP 1/16W 12K	
R6683	ERJ3GEYJ183V	MGF CHIP 1/16W 18K	
R6684	ERJ3GEYJ333V	MGF CHIP 1/16W 33K	
R7011	ERJ3GEYJ221V	MGF CHIP 1/16W 220	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1003	F0CAF104A021	POLYESTER 125V 0.1UF	⚠
C1004	ECKATS332ME8	CERAMIC 250V 3300PF	⚠
C1004	ORECKDNB332ME8	CERAMIC 125V 3300PF	⚠
C1004	ORECKETS332ME8	CERAMIC 125V 3300PF	⚠
C1004	ORVCKST3G332MX	CERAMIC 250V 3300PF	⚠
C1004	ORVCKSU3D332MX	CERAMIC 125V 3300PF	⚠
C1005	ECEA2DU820YE	ELECTROLYTIC 200V 82UF	⚠
C1005	ORF2A2D8200001	ELECTROLYTIC 220V 82UF	⚠
C1005	ORF2A2D8200003	ELECTROLYTIC 200V 82UF	⚠
C1005	ORVCESR2D820XE	ELECTROLYTIC 200V 82UF	⚠
C1006	ECKN3A821KBP	CERAMIC 1KV 820PF	
C1007	F1A3A472A010	CERAMIC 1KV 4700UF	
C1008	ECQB1H223JF3	POLYESTER 50V 0.022UF	
C1009	ECQB1H223JF3	POLYESTER 50V 0.022UF	
C1010	ECQB1H104JF3	POLYESTER 50V 0.1UF	
C1011	ECQB1H103JF3	POLYESTER 50V 0.01UF	
C1012	ECKATS332ME8	CERAMIC 250V 3300PF	⚠
C1012	ORECKDNB332ME8	CERAMIC 125V 3300PF	⚠
C1012	ORECKETS332ME8	CERAMIC 125V 3300PF	⚠
C1012	ORVCKST3G332MX	CERAMIC 250V 3300PF	⚠
C1012	ORVCKSU3D332MX	CERAMIC 125V 3300PF	⚠
C1013	ECJ2VC1H101J	C CHIP 50V 100PF	
C1015	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330UF	
C1017	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C1018	EEUFF1E471B	ELECTROLYTIC 25V 470UF	
C1019	ECA0JM102B	ELECTROLYTIC 6.3V 1000UF	
C1020	ECA1HM470I	ELECTROLYTIC 50V 47UF	
C1021	ECA1EM331B	ELECTROLYTIC 25V 330UF	
C1201	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1202	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1203	ECEA1CKA100	ELECTROLYTIC 16V 10UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C1204	ECEA1EKA100	ELECTROLYTIC 25V 10UF	
C1206	ECA1EM101I	ELECTROLYTIC 25V 100UF	
C1209	ECEA1CKA220	ELECTROLYTIC 16V 22UF	
C1211	ECEA0JEE101	ELECTROLYTIC 6.3V 100UF	
C1212	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1215	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1216	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1219	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1220	ECEA1HKAR47	ELECTROLYTIC 50V 0.47UF	
C1221	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C1222	ECKR1H103ZF5	CERAMIC 50V 0.01UF (A)	
C3002	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3003	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3004	ECJ1VC1H151J	C CHIP 50V 150PF	
C3005	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3006	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3007	ECJ1VC1H330J	C CHIP 50V 33PF	
C3008	ECEA1HKA4R7	ELECTROLYTIC 50V 4.7UF	
C3009	ECJ1VB1A105K	C CHIP 10V 1UF	
C3010	ECJ1VB1A105K	C CHIP 10V 1UF	
C3011	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3012	ECJ1VB1A224K	C CHIP 10V 0.22UF	
C3013	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3015	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3016	ECJ1VB1A105K	C CHIP 10V 1UF	
C3017	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3019	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3020	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C3021	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3022	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C3025	ECJ1VC1H331J	C CHIP 50V 330PF	
C3027	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3028	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C3029	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C3030	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C3031	ECJ1VB1A224K	C CHIP 10V 0.22UF	
C3032	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C3033	ECJ1VB1A105K	C CHIP 10V 1UF	
C3034	ECJ1VC1H020C	C CHIP 50V 2PF	
C3035	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3036	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C3037	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C3038	ECJ1VB1H472K	C CHIP 50V 4700PF	
C3039	ECJ1VB1E333K	C CHIP 25V 0.033UF	
C3040	ECJ1VB0J474K	C CHIP 6.3V 0.47UF	
C3041	ECJ1VB1C223K	C CHIP 25V 0.022UF	
C3042	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C3047	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C3048	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3049	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3050	ECEA1CKA470	ELECTROLYTIC 16V 47UF	
C3051	ECA0JM471	ELECTROLYTIC 6.3V 470UF	
C3052	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C3053	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C3059	ECJ1VB1H102K	C CHIP 50V 1000PF	
C3062	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C3063	ECJ1VF1H103Z	C CHIP 50V 0.01UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C3064	ECJ1VB1A105K	C CHIP 10V 1UF	
C3066	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C4010	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4016	ECJ1VC1H150J	C CHIP 50V 15PF	
C4018	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4041	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C4042	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4051	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C4052	ECJ1VF1C104Z	C CHIP 16V 0.1UF	
C4053	ECJ1VB1H102K	C CHIP 50V 1000PF	
C4061	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C4062	ECEA1CKA330B	ELECTROLYTIC 16V 33UF	
C4063	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C4064	ECJ1VB1H182K	C CHIP 50V 0.0018UF	
C4065	ECJ1VB1H182K	C CHIP 50V 0.0018UF	
C4082	ECJ1VB1H471K	C CHIP 50V 470PF	
C4102	ECQB1562JF	POLYESTER 100V 5600PF	
C4103	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C4104	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C4106	ECEA1CKS220I	ELECTROLYTIC 16V 22UF	
C4201	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4202	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7UF	
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33UF	
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33UF	
C4205	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4206	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4207	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4208	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4209	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4210	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4211	ECJ1VB1H153K	C CHIP 50V 0.015UF	
C4212	ECJ1VB1H153K	C CHIP 50V 0.015UF	
C4213	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4214	ECEA1CKA101	ELECTROLYTIC 16V 100UF	
C4216	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4217	ECEA0JKA220	ELECTROLYTIC 6.3V 22UF	
C4218	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4219	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4227	ECJ1VF1C224Z	C CHIP 16V 0.22UF	
C4229	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C4230	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C4451	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C4452	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C4455	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4456	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4459	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C4601	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4603	ECJ1VB1H152K	C CHIP 50V 1500PF	
C4901	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4902	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2UF	
C4903	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C4904	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3UF	
C4905	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C4906	ECEA1HKA010	ELECTROLYTIC 50V 1UF	
C4911	ECJ1VB1E223K	C CHIP 25V 0.022UF	
C4912	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4913	ECJ1VB1H103K	C CHIP 50V 0.01UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C4917	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4918	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4919	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C4920	ECJ1VB1E223K	C CHIP 25V 0.022UF	
C5001	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C5002	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C5003	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C5004	ECJ1VB1E103K	C CHIP 25V 0.01UF	
C5005	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C5006	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C6003	ECJ1VF1E104Z	C CHIP 25V 0.1UF	
C6006	ECJ1VF1H104Z	C CHIP 50V 0.1UF	
C6007	ECJ1VF1H104Z	C CHIP 50V 0.1UF	
C6008	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C6009	ECJ1VF1H104Z	C CHIP 50V 0.1UF	
C6010	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	
C6014	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6016	ECJ2VB1E104K	C CHIP 25V 0.1UF	
C6017	ECJ1VF1E104Z	C CHIP 25V 0.1UF	
C6020	ECJ1VC1H101J	C CHIP 50V 100PF	
C6022	ECJ1VC1H180J	C CHIP 50V 18PF	
C6027	ECJ1VB1H471K	C CHIP 50V 470PF	
C6028	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C6029	ECJ1VC1H270J	C CHIP 50V 27PF	
C6030	ECJ1VC1H220J	C CHIP 50V 22PF	
C6031	ECJ1VC1H820J	C CHIP 50V 82PF	
C6033	ECJ1VF1H104Z	C CHIP 50V 0.1UF	
C6034	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6035	ECJ1VF1A105Z	C CHIP 10V 1UF	
C6038	ECJ1VB1H102K	C CHIP 50V 1000PF	
C6039	ECJ1VB1H333K	C CHIP 50V 0.033UF	
C6040	ECJ1VB1H102K	C CHIP 50V 1000PF	
C6041	ECJ1VB1H561K	C CHIP 50V 560PF	
C6047	ECJ1VC1H101J	C CHIP 50V 100PF	
C6048	ECJ1VC1H101J	C CHIP 50V 100PF	
C6049	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C6063	ECJ1VF1A105Z	C CHIP 10V 1UF	
C6201	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C6202	ECJ1VB1H392K	C CHIP 50V 3900PF	
C6203	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C6204	ECJ1VB1H681K	C CHIP 50V 680PF	
C6205	ECEA1CKA100	ELECTROLYTIC 16V 10UF	
C6206	ECEA0JKN220I	ELECTROLYTIC 6.3V 22UF	
C6207	ECJ1VC1H330J	C CHIP 50V 33PF	
C6208	ECJ1VB1C563K	C CHIP 16V 0.056UF	
C6209	ECJ1VB1C563K	C CHIP 16V 0.056UF	
C6210	ECJ1VB1C563K	C CHIP 16V 0.056UF	
C6211	ECJ1VB1C563K	C CHIP 16V 0.056UF	
C6212	ECA1EM221B	ELECTROLYTIC 25V 220	
C6213	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C6214	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C6215	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C6216	ECJ1VB1C104K	C CHIP 16V 0.1UF	
C6217	ECA1EM101I	ELECTROLYTIC 25V 100UF	
C6218	ECEA0JKA221	ELECTROLYTIC 6.3V 220UF	
C6219	ECJ1VF1H104Z	C CHIP 50V 0.1UF	
C6220	ECJ1VB1H182K	C CHIP 50V 0.0018UF	

Ref. No.	Part No.	Part Name & Description	Remarks
C6221	ECJ1VB1H102K	C CHIP 50V 1000PF	
C6222	ECJ1VF1A105Z	C CHIP 10V 1UF	
C6223	ECJ1VB1H102K	C CHIP 50V 1000PF	
C6224	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C6225	ECJ1VB1H223K	C CHIP 50V 0.022UF	
C6226	ECJ1VB1H223K	C CHIP 50V 0.022UF	
C6227	ECJ1VB1A224K	C CHIP 10V 0.22UF	
C6228	ECJ1VB1E104K	C CHIP 25V 0.1UF	
C6229	ECJ1VB1H103K	C CHIP 50V 0.01UF	
C6230	ECJ1VF1H104Z	C CHIP 50V 0.1UF	
C6303	ECJ1VF1E104Z	C CHIP 25V 0.1UF	
C6304	F2A0J331A283	ELECTROLYTIC 6.3V 330UF	
C6307	ECEA0JKA101	ELECTROLYTIC 6.3V 100UF	
C7001	ECEA0JKA331	ELECTROLYTIC 6.3V 330UF	
C7010	ECJ1VB1H102K	C CHIP 50V 1000PF	
C7021	ECJ1VC1H270J	C CHIP 50V 27PF	
C7022	ECJ1VC1H270J	C CHIP 50V 27PF	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	G0B183E00002	LINE FILTER 0.5A 18MH	⚠
L1001	ELF15N005A	LINE FILTER 0.5A 18MH	⚠
L1001	J0HBLD000001	LINE FILTER 0.5A 18MH	⚠
L1003	J1ZZA0000001	RESONANT SNUBBER	
L1005	VLQSAB7D100K	COIL 10UH	
L1006	G0A220G00018	COIL 22UH	
L3001	G0C271JA0019	COIL 270UH	
L3004	G1C120JA0036	COIL 12UH	
L3005	G0C1R5KA0030	COIL 1.5UH	
L3011	ELEXT150KE04	COIL 15UH	
L3012	ELEXT680KE04	COIL 68UH	
L3013	ELEXT330KE04	COIL 33UH	
L3014	ELEXT680KE04	COIL 68UH	
L4073	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L4074	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L4077	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L4078	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L4079	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L4080	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L4101	ELESN471KA	COIL 470UH	
L4201	ELESN101KA	COIL 100UH	
L5001	ELEXT560KE04	COIL 56UH	
L6002	G0C4R7JA0019	INDUCTOR CHIP	
L6003	ELEXT680KE04	COIL 68UH	
L6004	ELEXT101KE04	COIL 100UH	
L6302	ELESN470KA	COIL 47UH	
L7003	ELEXT101KE04	COIL 100UH	

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3001	H0D357400068	CRYSTAL OSCILLATOR	
X6002	H0D120500017	CRYSTAL OSCILLATOR	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3501	K1MN09A00029	CONNECTOR 9P	
P3502	LSEK0540	GROUNDING WIRE	
P4001	K1MZ02A00003	FE CONNECTOR 2P	
P4002	K1MN06A00030	CONNECTOR 6P	
P6201	K1KA08A00290	CONNECTOR 8P	
P6202	K1KA02A00375	CONNECTOR 2P	
P6203	K1MN07A00017	CONNECTOR 7P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	K0ZZ00000598	SWITCH	
SW6002	K0C111A00006	SWITCH	
SW6303	EVQ11A09K	PUSH SWITCH (B,C,F)	
SW6304	EVQ11A09K	PUSH SWITCH	
SW6305	EVQ11A09K	PUSH SWITCH	
SW6306	EVQ11A09K	PUSH SWITCH (B,C,F)	
SW6310	EVQ11A09K	PUSH SWITCH (A,D,E)	
SW6311	EVQ11A09K	PUSH SWITCH	
SW6314	EVQ11A09K	PUSH SWITCH	
SW6315	EVQ11A09K	PUSH SWITCH	
SW6317	EVQ11A09K	PUSH SWITCH	
SW6320	EVQ11A09K	PUSH SWITCH (A,D,E)	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	K5D162AQ0004	FUSE 125V 1.6A	⚠
F1001	K5D162ADA001	FUSE 125V 1.6A	⚠
F1001	K5D162ADA008	FUSE 125V 1.6A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	LSTP0126	TRANSFORMER	⚠
T4101	G2A252C00002	TRANSFORMER	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3001	K2HA608B0002	HI-FI AUDIO/VIDEO JACK SOCKET	
JK3002	K2HA306B0058	AUDIO/VIDEO JACK SOCKET (A,B,C,D,F)	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
711	LSSZ0007	INFRARED RECEIVER UNIT	
716	B3CJZ0000004	LED DISPLAY PANEL	
741	LSJA0360	AC CORD W/PLUG,AC 120V	⚠
741	LSJA0348	AC CORD W/PLUG,AC 120V	⚠
741	LSJA0358	AC CORD W/PLUG,AC 120V	⚠
741	LSJA0359	AC CORD W/PLUG,AC 120V	⚠
741	LSJA0361	AC CORD W/PLUG,AC 120V	⚠
743	ENG56D01G1F	TUNER UHF/VHF NR (A,B,C)	
743	J3AAADB00001	TUNER UHF/VHF NR (D,E,F)	
771	EYF52BC	FUSE HOLDER	

11. SCHEMATIC DIAGRAMS FOR PRINTING WITH LETTER SIZE

1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
   The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ● : Test point with a jumper wire across a hole in P.C.B.
   ○ : Test point with no test pin.
   □→ :Test point with a component lead on the foil side.

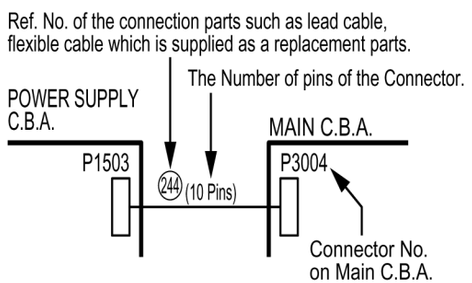
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V).....Zener Voltage

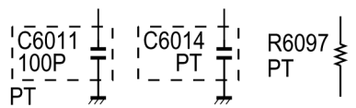
2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to,
   in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.


Ref. No. of the connection parts such as lead cable, flexible cable which is supplied as a replacement parts.
The Number of pins of the Connector.
POWER SUPPLY C.B.A.
MAIN C.B.A.
P1503
(244) (10 Pins)
P3004
Connector No. on Main C.B.A.

3. Parts marked "PT" are not used in any models included in this service model.

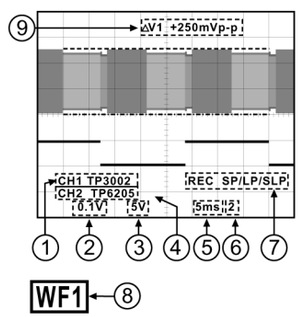
Example:



4. Jumper wires are used for WA10, WA5 etc and these are not supplied as replacement parts.

Signal Waveform Note

How to read Signal Waveform



① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope (1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

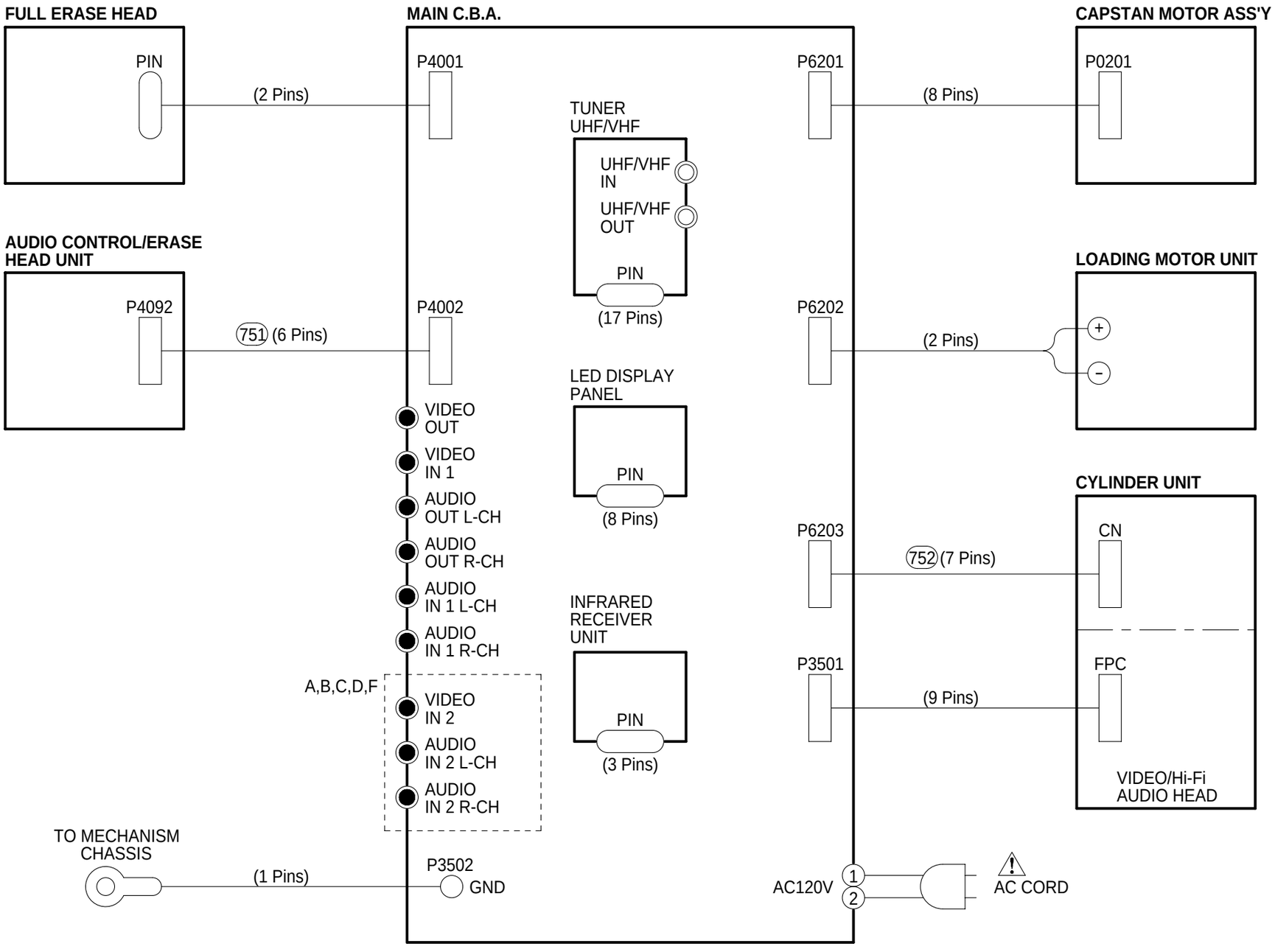
NOTE:
Circuit Board Layout includes components which are not used.

Model No. Identification Mark

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT

Note : Refer to item 3 of Schematic Diagram Notes for mark "PT".

INTERCONNECTION SCHEMATIC DIAGRAM



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

MAIN I (SYSTEM CONTROL / SERVO) SCHEMATIC DIAGRAM

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT

REC VIDEO SIGNAL · PB VIDEO SIGNAL · CAPSTAN SERVO · CYLINDER SERVO

MODE SELECT SWITCH

PIN NO.OF IC6001 MODE	SW1 (33)	SW2 (32)	SW3 (31)	SW4 (30)
EJECT	L	H	H	H
DOWN	L	H	L	L
R-REW	H	H	L	L
LOAD	L	L	H	L
REV	H	L	H	L
PLAY	L	H	H	L
POWER OFF	H	H	H	L
STOP R	L	L	L	H
STOP F	H	L	L	H
FF/REW	L	L	H	H
FF2	L	H	H	H
INTERMEDIATE POSITIONS BEWEEN EACH POSITIONS	H	H	H	H

(A,D,E)

KEY VOLTAGE CHART

TERMINAL VOLTAGE	0V~0.6V	0.7V~1.9V	2.0V~3.1V	3.2V~4.4V
KEY DATA 1 (IC6001-1)	———	REW (SW6310)	FF (SW6320)	———
KEY DATA 2 (IC6001-2)	———	STOP/EJECT (SW6304)	PLAY (SW6305)	———
KEY DATA 3 (IC6001-3)	CH DOWN (SW6315)	———	———	———
KEY DATA 4 (IC6001-4)	REC (SW6311)	CH UP (SW6317)	———	POWER (SW6314)

(B,C,F)

KEY VOLTAGE CHART

TERMINAL VOLTAGE	0V~0.6V	0.7V~1.9V	2.0V~3.1V	3.2V~4.4V
KEY DATA 1 (IC6001-1)	———	———	STOP/EJECT (SW6303)	———
KEY DATA 2 (IC6001-2)	———	REW (SW6304)	PLAY (SW6305)	FF (SW6306)
KEY DATA 3 (IC6001-3)	CH DOWN (SW6315)	———	———	———
KEY DATA 4 (IC6001-4)	REC (SW6311)	CH UP (SW6317)	———	POWER (SW6314)

LINK TO I/O CHART

LINK TO VOLTAGE CHART

MAIN I (SYSTEM CONTROL / SERVO) SCHEMATIC DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

MAIN II (VIDEO SIGNAL PROCESS / AUDIO) SCHEMATIC DIAGRAM

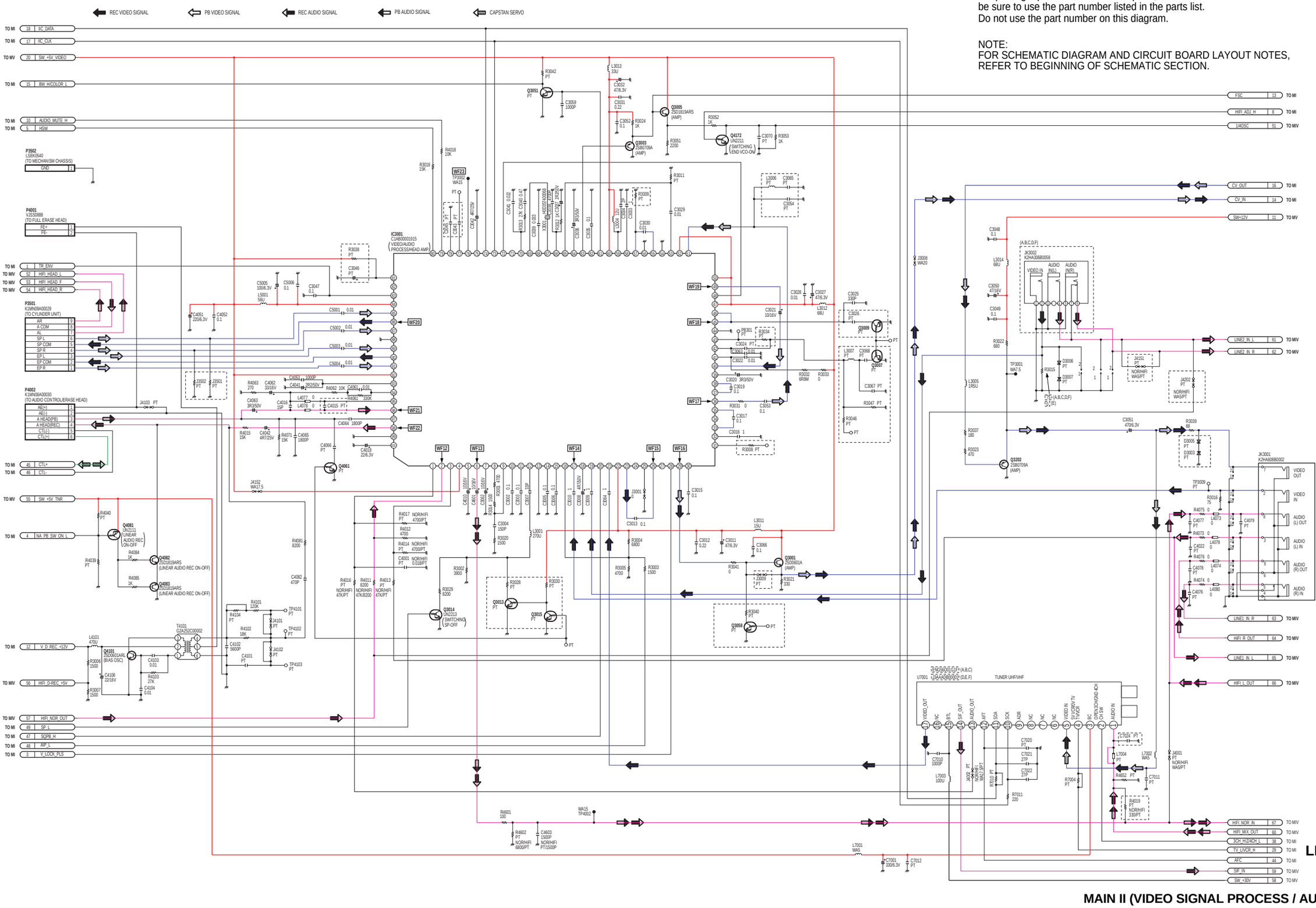
NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

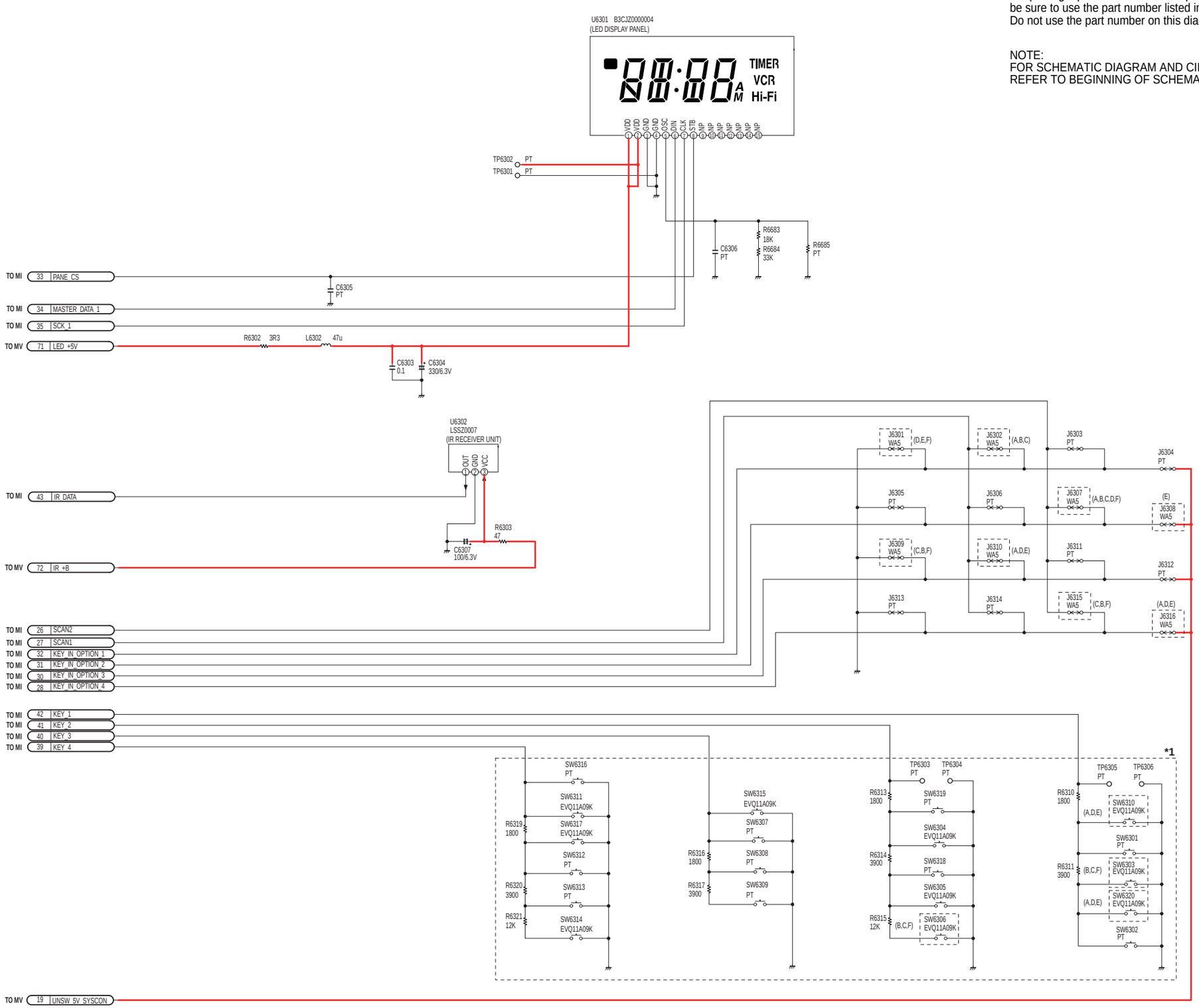
MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT

REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
CAPSTAN SERVO



LINK TO VOLTAGE CHART

MAIN III (OPERATION) SCHEMATIC DIAGRAM



NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT

***1**

	A,D,E	B,C,F
SW6301	---	---
SW6302	---	---
SW6303	---	STOP/EJECT
SW6304	STOP/EJECT	REW
SW6305	PLAY	PLAY
SW6306	---	FF
SW6307	---	---
SW6308	---	---
SW6309	---	---
SW6310	REW	---
SW6311	REC	REC
SW6312	---	---
SW6313	---	---
SW6314	POWER	POWER
SW6315	CH_DOWN	CH_DOWN
SW6316	---	---
SW6317	CH_UP	CH_UP
SW6318	---	---
SW6319	---	---
SW6320	FF	---

LINK TO VOLTAGE CHART

MAIN III (OPERATION) SCHEMATIC DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT

REC AUDIO SIGNAL
PB AUDIO SIGNAL

TO MI 2 MTS_MODE
TO MV 19 UNSW_+5V_SYSCON
TO MII 64 HIFI_R_OUT
TO MII 66 HIFI_L_OUT
TO MII 60 HIFI_MIX_OUT
TO MII 57 HIFI_NOR_OUT
TO MII 67 HIFI_NOR_IN
TO MV 11 SW+12V
TO MII 63 LINE1_IN_R
TO MII 65 LINE2_IN_R

SIF_IN 59 TO MII
DEFEAT_H 7 TO MII
IIC_DATA 18 TO MII
IIC_CLK 17 TO MII
AUDIO_MUTE_H 10 TO MII
SW_+5V_AUDIO 75 TO MV
1/4OSC 51 TO MII
HIFI_D-REC_5V 56 TO MII
HIFI_PLAY_H 9 TO MI
HIFI_H_SW 6 TO MI
HIFI_HEAD_L 52 TO MII
HIFI_HEAD_R 54 TO MII
HIFI_HEAD_F 53 TO MII
LINE1_IN_L 62 TO MII
LINE2_IN_L 61 TO MII

IC4201
AN3663FBP
(Hi-Fi AUDIO/MTS/SAP SIGNAL PROCESS)

WF24 WF25 WF26 WF27 WF28

(AUDIO MUTE)

LINK TO VOLTAGE CHART

MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

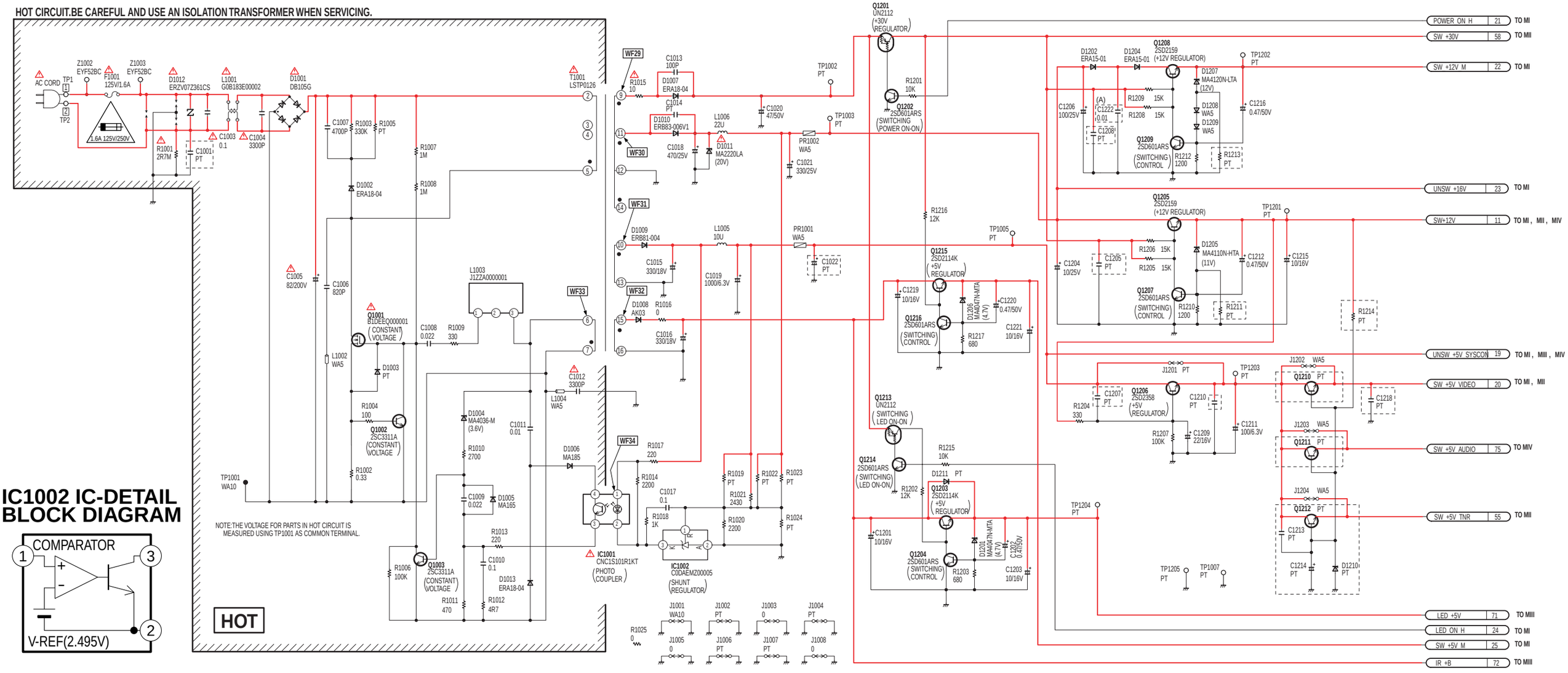
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V/250V FUSE.
ATTENTION:POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

HOT CIRCUIT.BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



IC1002 IC-DETAIL BLOCK DIAGRAM

LINK TO VOLTAGE CHART

MAIN C.B.A. LSEP2131HA (A) / LSEP2131HB (B,C) / LSEP2131HD (D) / LSEP2131HF (E) / LSEP2131HE (F)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

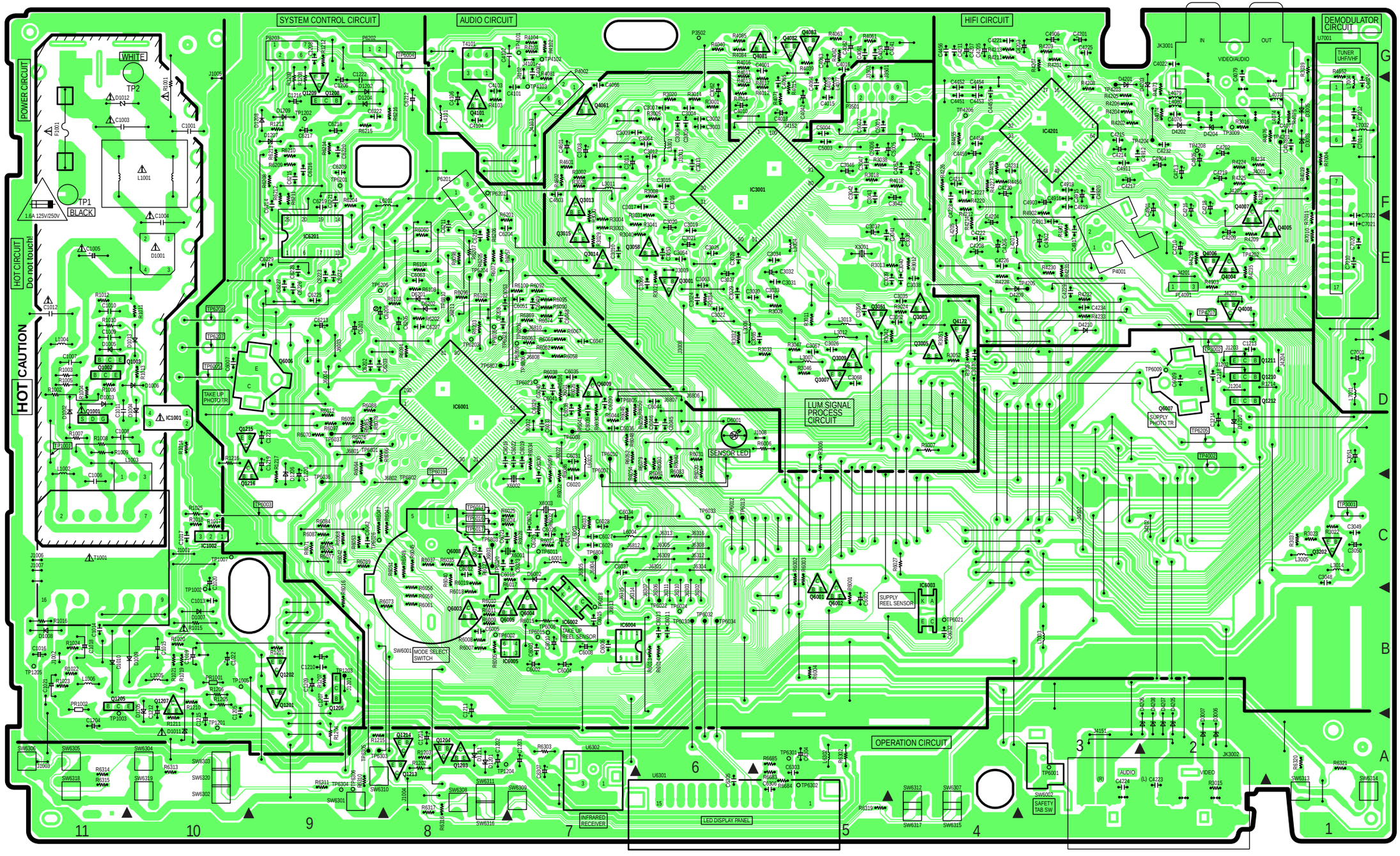
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V/250V FUSE.
ATTENTION:POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V/250V

1.6A 125V/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

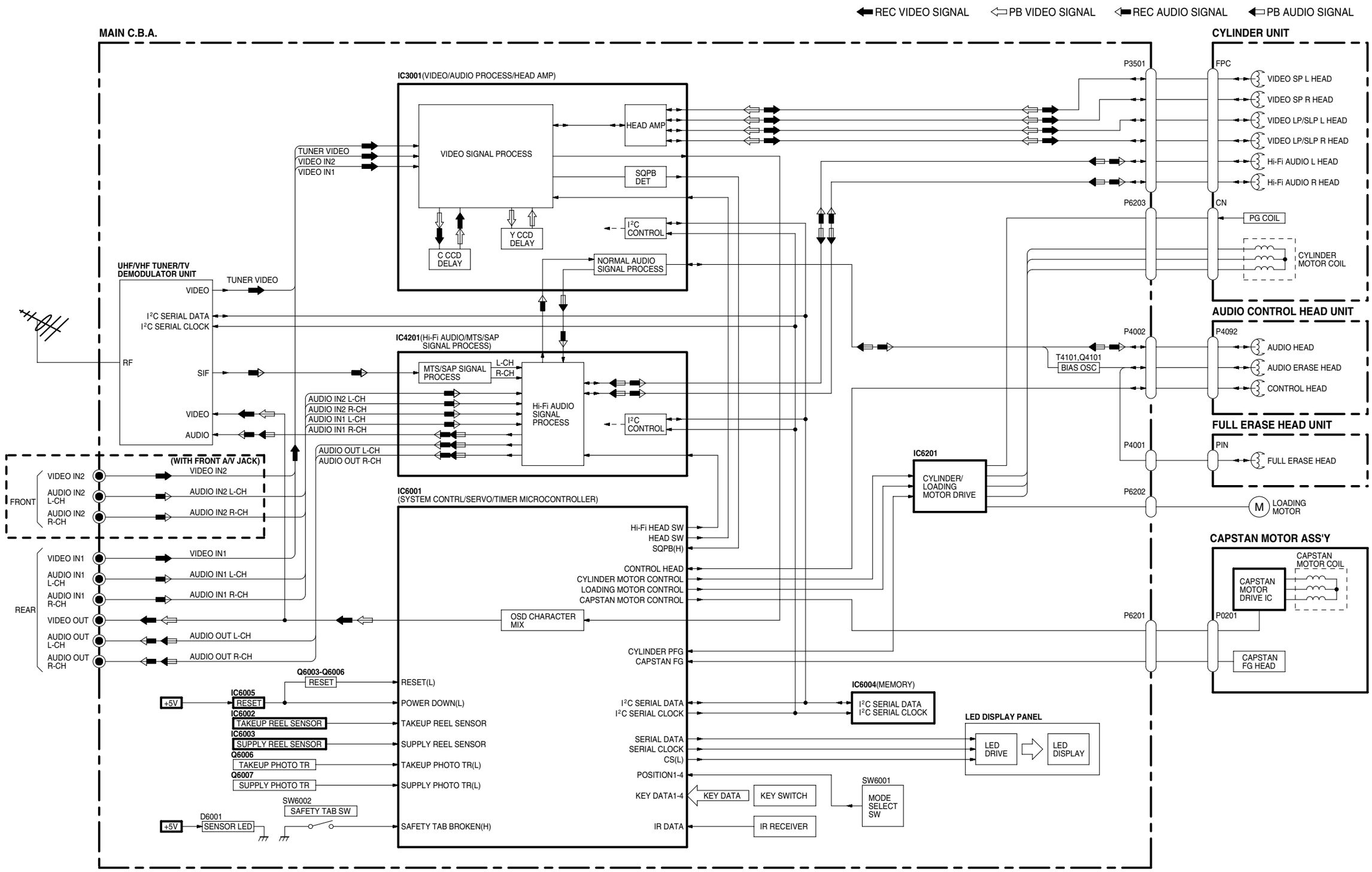


COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

MAIN C.B.A. LSEP2131HA/LSEP2131HB/LSEP2131HD/LSEP2131HF/LSEP2131HE
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

OVERALL BLOCK DIAGRAM



OVERALL BLOCK DIAGRAM

PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

MAIN C.B.A. (POWER SUPPLY/VIDEO/AUDIO SECTION)

MODE / PIN NO.	STOP
IC1001	
1	4.8
2	3.7
3	1.5
4	10.8
IC1002	
1	2.5
2	0
3	3.7
IC3001	
1	0
2	0
3	0
4	5.1
5	2.1
6	2.6
7	2.8
8	1.9
9	1.9
10	1.9
11	2.6
12	1.6
13	0
14	2.8
15	2.8
16	2.0
17	2.8
18	2.0
19	2.8
20	0
21	2.8
22	5.0
23	2.3
24	-
25	0
26	3.0
27	0
28	0
29	2.2
30	2.8
31	0.4
32	2.5
33	2.1
34	-
35	3.0
36	2.3
37	3.0
38	2.2
39	1.4
40	2.1
41	2.9
42	2.0
43	2.1
44	0
45	3.2

MODE / PIN NO.	STOP
46	3.2
47	5.0
48	4.8
49	3.2
50	5.0
51	2.0
52	5.0
53	2.6
54	0
55	2.1
56	0
57	2.2
58	2.2
59	4.9
60	4.9
61	3.9
62	2.3
63	2.2
64	2.3
65	2.3
66	2.3
67	2.2
68	1.2
69	2.0
70	2.7
71	0
72	4.8
73	3.7
74	3.4
75	2.8
76	2.2
77	2.8
78	0
79	0
80	2.3
81	0
82	-
83	3.4
84	5.0
85	2.2
86	2.2
87	2.2
88	0
89	2.2
90	2.2
91	2.2
92	5.1
93	1.5
94	2.5
95	2.5
96	2.5
97	0
98	2.3
99	0
100	2.6

MODE / PIN NO.	STOP
IC4201	
1	-
2	0
3	-
4	0
5	2.5
6	2.5
7	2.1
8	0.3
9	0
10	0
11	0
12	2.1
13	0.2
14	0
15	0.6
16	2.5
17	0
18	2.5
19	0
20	0
21	2.1
22	0
23	0
24	2.1
25	5.1
26	2.1
27	0
28	3.9
29	0.4
30	0.2
31	0.4
32	2.5
33	2.5
34	0.7
35	2.5
36	0
37	1.7
38	0
39	-
40	5.1
41	0
42	0
43	4.9
44	0
45	0
46	0
47	2.5
48	2.3
49	3.6
50	3.5
51	5.0
52	3.5
53	6.0
54	2.5

MODE / PIN NO.	STOP
55	0
56	0
57	6.0
58	12.1
59	6.0
60	0.8
61	2.5
62	2.4
63	2.6
64	0.6
Q1001	
S	0
G	1.3
D	-22.1
Q1002	
E	0
C	1.3
B	0
Q1003	
E	0
C	1.3
B	0.4
Q1201	
E	29.5
C	29.5
B	0
Q1202	
E	0
C	0
B	0.7
Q1203	
E	5.1
C	5.9
B	5.7
Q1204	
E	0
C	5.7
B	0.6
Q1205	
E	11.9
C	17.1
B	12.4
Q1206	
E	5.2
C	5.2
B	6.0
Q1207	
E	0
C	12.4
B	0.6
Q1208	
E	12.4
C	15.8
B	12.9
Q1209	

MODE / PIN NO.	STOP
E	0
C	12.9
B	0.6
Q1213	
E	29.5
C	29.5
B	0
Q1214	
E	0
C	0
B	0.7
Q1215	
E	5.1
C	5.9
B	5.7
Q1216	
E	0
C	5.7
B	0.6
Q3001	
E	1.5
C	5.1
B	2.2
Q3003	
E	2.9
C	0
B	2.2
Q3005	
E	2.2
C	5.1
B	2.9
Q3014	
E	0
C	0
B	0
Q3202	
E	2.2
C	0
B	1.6
Q4081	
E	5.1
C	4.9
B	2.8
Q4082	
E	0
C	0
B	0.8
Q4083	
E	0
C	0
B	0.8
Q4101	
E	0
C	0
B	0

MODE / PIN NO.	STOP
Q4172	
E	0
C	0
B	5.1
TP1001	0
TP1002	29.5
TP1003	17.1
TP1005	5.3
TP1007	0
TP1201	11.9
TP1202	12.4
TP1203	5.2
TP1204	5.1
TP1205	0
TP3001	2.2
TP3002	2.2
TP3009	2.2
TP4002	0
TP4101	0
TP4102	0
TP4103	0
TP4201	0
TP4202	0
TP4203	0
TP4204	0
TP4205	1.5
TP4206	0.1
TP4207	0.8
TP4208	0.3

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

VOLTAGE CHART
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

MAIN C.B.A. (SYSTEM CONTROL/SERVO SECTION)

MODE / PINNO	REC	PLAY
IC6001		
1	5.2	5.2
2	5.2	5.2
3	5.2	5.2
4	5.2	5.2
5	3.9	3.9
6	5.0	5.0
7	5.1	5.1
8	4.6	4.6
9	3.3	4.0
10	0	0
11	5.0	5.0
12	-	-
13	0	0
14	5.5	5.5
15	-	-
16	5.2	0
17	-	-
18	2.6	2.6
19	0	2.6
20	5.2	0
21	0	0
22	0	0
23	5.1	5.1
24	-	-
25	-	-
26	4.0	4.1
27	1.7	1.7
28	0	0
29	4.8	4.8
30	0	0
31	5.2	5.2
32	5.2	5.2
33	0	0
34	5.2	5.2
35	-	-
36	-	-
37	5.2	5.2
38	-	-
39	-	-
40	0	0
41	0	0
42	0	0
43	5.2	5.2
44	3.1	3.1
45	3.1	3.1
46	0	0
47	1.4	1.4
48	2.3	2.3
49	0	0
50	1.5	1.5
51	0	0
52	1.5	1.5
53	4.9	5.0
54	2.1	2.1

MODE / PINNO	REC	PLAY
55	2.0	2.2
56	1.7	1.8
57	0	0
58	3.4	3.4
59	1.7	1.7
60	3.4	3.4
61	5.1	5.1
62	3.4	3.4
63	0	0
64	1.7	1.7
65	0	0
66	4.9	4.9
67	0	0
68	5.1	5.1
69	0	0
70	5.1	5.1
71	3.3	3.3
72	3.0	3.0
73	0	0
74	0	0
75	5.0	5.0
76	2.6	2.6
77	2.4	2.4
78	5.1	5.1
79	3.8	2.6
80	5.0	4.2
81	0	0
82	0	0
83	4.9	4.9
84	2.0	2.0
85	0	0
86	2.5	2.5
87	2.5	2.5
88	0	0
89	0	0
90	1.4	1.4
91	2.6	2.6
92	2.6	2.6
93	0	0
94	2.4	2.4
95	2.7	2.6
96	2.6	2.6
97	2.5	2.6
98	5.1	5.1
99	5.1	5.1
100	-	-
IC6002		
1	1.2	1.2
2	0	0
3	0	0
4	5.0	4.2
IC6003		
1	2.5	2.5
2	1.2	1.2
3	0	0

MODE / PINNO	REC	PLAY
4	3.8	2.6
IC6004		
1	0	0
2	0	0
3	0	0
4	0	0
5	3.1	3.1
6	3.3	3.3
7	0	0
8	5.1	5.1
IC6005		
1	5.2	5.2
2	5.2	5.2
3	0	0
4	0	0
5	5.2	5.2
6	0	0
IC6201		
1	12.3	12.3
2	0.3	0.3
3	0	0
4	0.3	0.3
5	0	0
6	0	0
7	16.4	16.4
8	0	0
9	2.8	2.8
10	1.6	1.7
11	1.7	1.7
12	0.7	0.7
13	1.4	1.5
14	2.4	2.4
15	2.5	2.5
16	2.5	2.5
17	2.5	2.5
18	1.3	1.3
19	5.0	5.0
20	3.6	3.6
21	12.3	12.3
22	3.6	3.6
23	3.6	3.6
24	0	0
25	3.5	3.6
26	0	0
27	0	0
Q6001		
E	4.5	0
C	11.1	11.8
B	5.2	0
Q6002		
E	11.9	11.9
C	11.8	0
B	11.1	11.8
Q6003		
E	0	0

MODE / PINNO	REC	PLAY
C	0.1	0.1
B	0.7	0.7
Q6004		
E	5.2	5.2
C	5.2	5.2
B	4.4	4.4
Q6005		
E	5.2	5.2
C	5.2	5.2
B	4.5	4.5
Q6006		
E	0	0
C	4.9	4.9
B	-	-
Q6007		
E	0	0
C	4.9	4.9
B	-	-
Q6008		
E	0	0
C	5.2	5.2
B	0	0
Q6009		
E	2.2	2.2
C	0	0
B	1.5	1.5
TP6001	0	0
TP6002	5.2	5.2
TP6003	5.2	5.2
TP6004	0	0
TP6005	4.9	4.9
TP6006	5.2	5.2
TP6007	2.9	2.9
TP6008	1.5	1.5
TP6009	4.9	4.9
TP6010	1.5	1.5
TP6011	5.2	5.2
TP6012	3.4	3.3
TP6013	3.1	3.1
TP6014	0	0
TP6015	0	0
TP6016	5.2	5.2
TP6017	5.2	5.2
TP6018	4.2	4.2
TP6019	0	0
TP6020	5.2	5.2
TP6021	3.8	2.6
TP6022	1.7	1.7
TP6023	1.7	1.8
TP6024	3.4	3.4
TP6026	0	0
TP6028	0	0
TP6030	4.9	4.9
TP6032	5.1	5.1
TP6033	0	0

MODE / PINNO	REC	PLAY
TP6034	5.1	5.1
TP6035	5.2	5.2
TP6036	4.9	4.9
TP6037	3.9	3.9
TP6201	2.4	2.4
TP6202	2.4	2.4
TP6203	2.4	2.4
TP6204	2.6	2.6
TP6205	2.6	2.6
TP6206	2.6	2.6
TP6207	0	0
TP6208	2.5	2.5
TP6301	0	0
TP6302	4.9	4.9
TP6303	5.2	5.2
TP6304	0	0
TP6305	5.2	5.2
TP6306	0	0
TP6801	5.0	5.0
TP6802	4.0	4.1
TP6803	5.2	5.2
TP6804	0	0
TP6805	0	0
TP6806	4.9	4.9
TP6807	0	0
TP6808	3.3	3.3
TP6809	0	0
TP6810	0	0

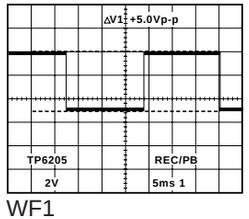
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

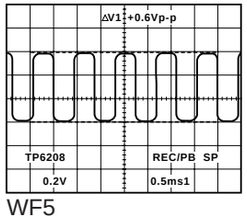
MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

VOLTAGE CHART
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

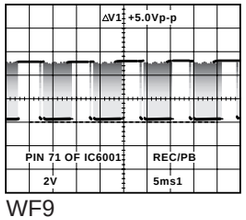
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



WF1



WF5



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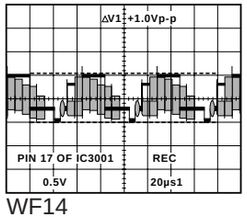

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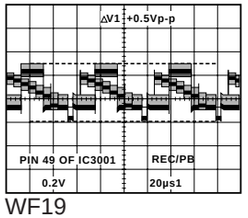
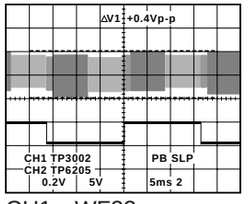
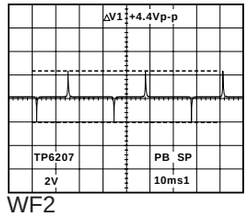


WF19



CH1 WF23
CH2 WF1



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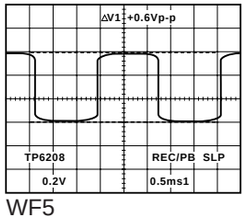

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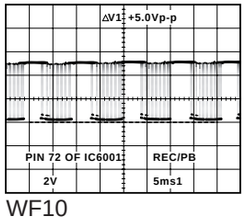

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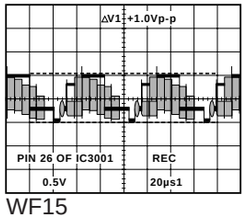

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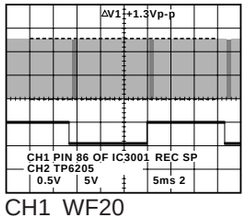
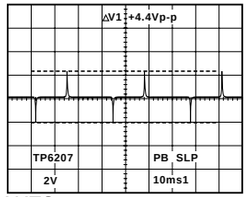
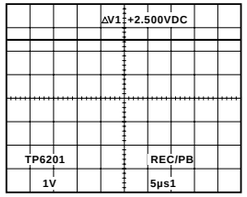


CH1 WF20
CH2 WF1



WF2



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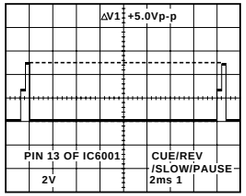

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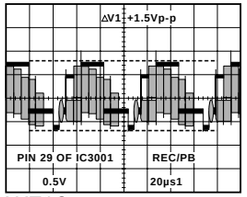

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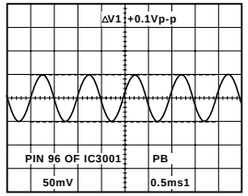

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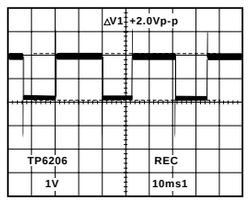
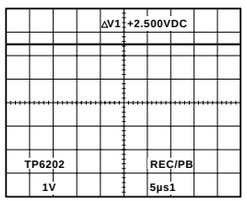


WF3



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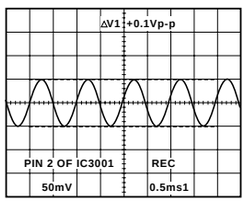

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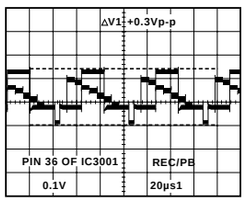

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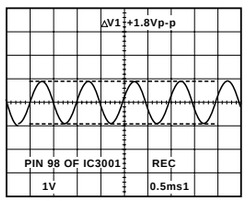
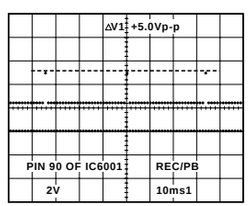


WF22



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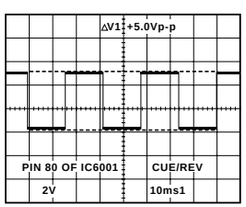

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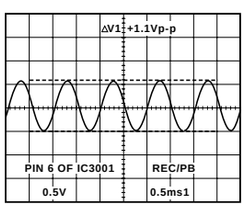

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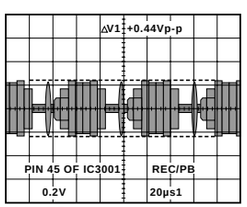

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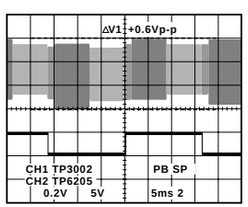
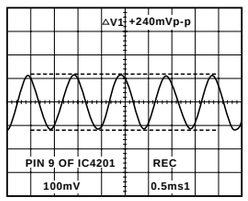


CH1 WF23
CH2 WF1

SIGNAL WAVEFORMS
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



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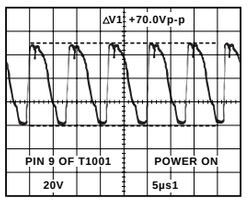

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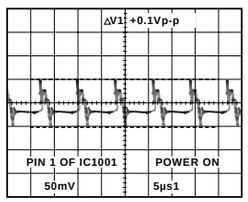

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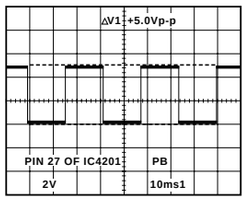

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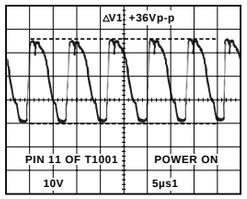

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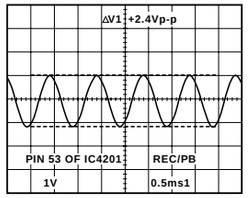

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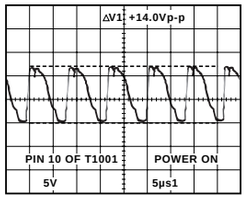
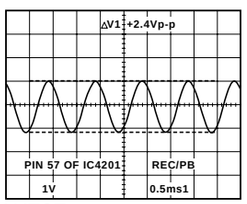


WF31



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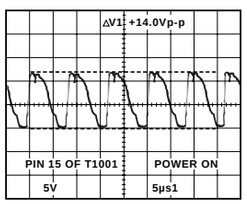
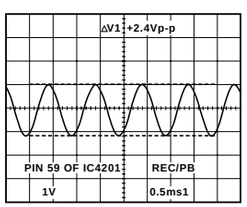
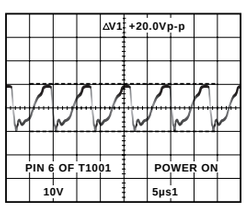


WF32



WF28

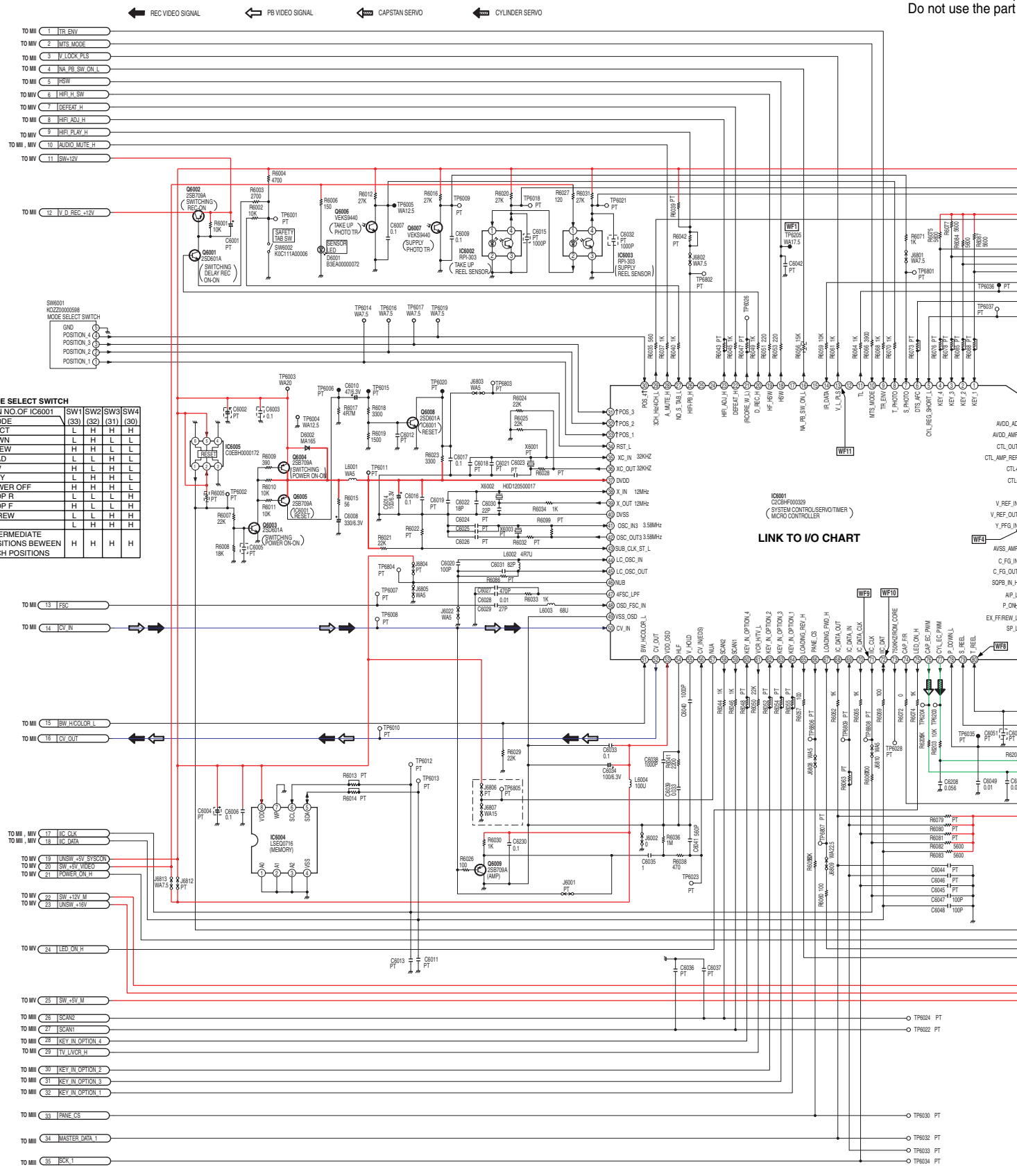


WF33

6.2. MAIN SCHEMATIC DIAGRAMS

MAIN I (SYSTEM CONTROL / SERVO) SCHEMATIC DIAGRAM

NOTE:
For placing a purch
be sure to use the p
Do not use the part



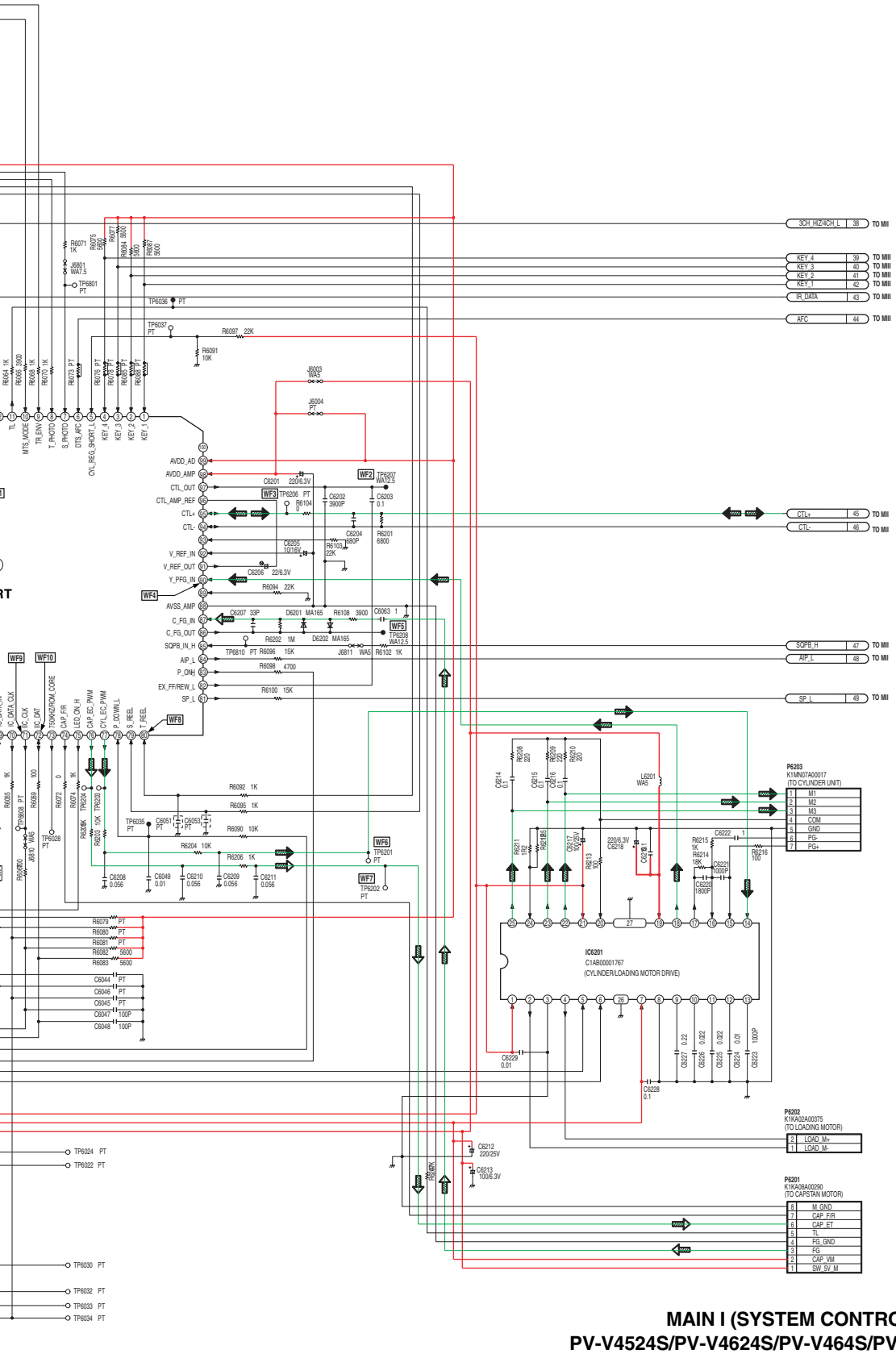
MODE SELECT SWITCH				
P/N NO.OF IC6001 / MODE	SW1 (33)	SW2 (32)	SW3 (31)	SW4 (30)
EJECT	L	H	H	H
DOWN	L	H	L	L
R-REW	H	H	L	L
LOAD	L	L	H	L
REV	H	L	H	L
PLAY	L	H	H	L
POWER OFF	H	H	H	L
STOP R	L	L	L	H
STOP F	H	L	L	H
FF/REW	L	L	H	H
FF2	L	H	H	H
INTERMEDIATE POSITIONS BEWEEN EACH POSITIONS	H	H	H	H

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT



(A,D,E)

KEY VOLTAGE CHART

TERMINAL VOLTAGE	0V~0.6V	0.7V~1.9V	2.0V~3.1V	3.2V~4.4V
KEY DATA 1 (IC6001-1)	———	REW (SW6310)	FF (SW6320)	———
KEY DATA 2 (IC6001-2)	———	STOP/EJECT (SW6304)	PLAY (SW6305)	———
KEY DATA 3 (IC6001-3)	CH DOWN (SW6315)	———	———	———
KEY DATA 4 (IC6001-4)	REC (SW6311)	CH UP (SW6317)	———	POWER (SW6314)

(B,C,F)

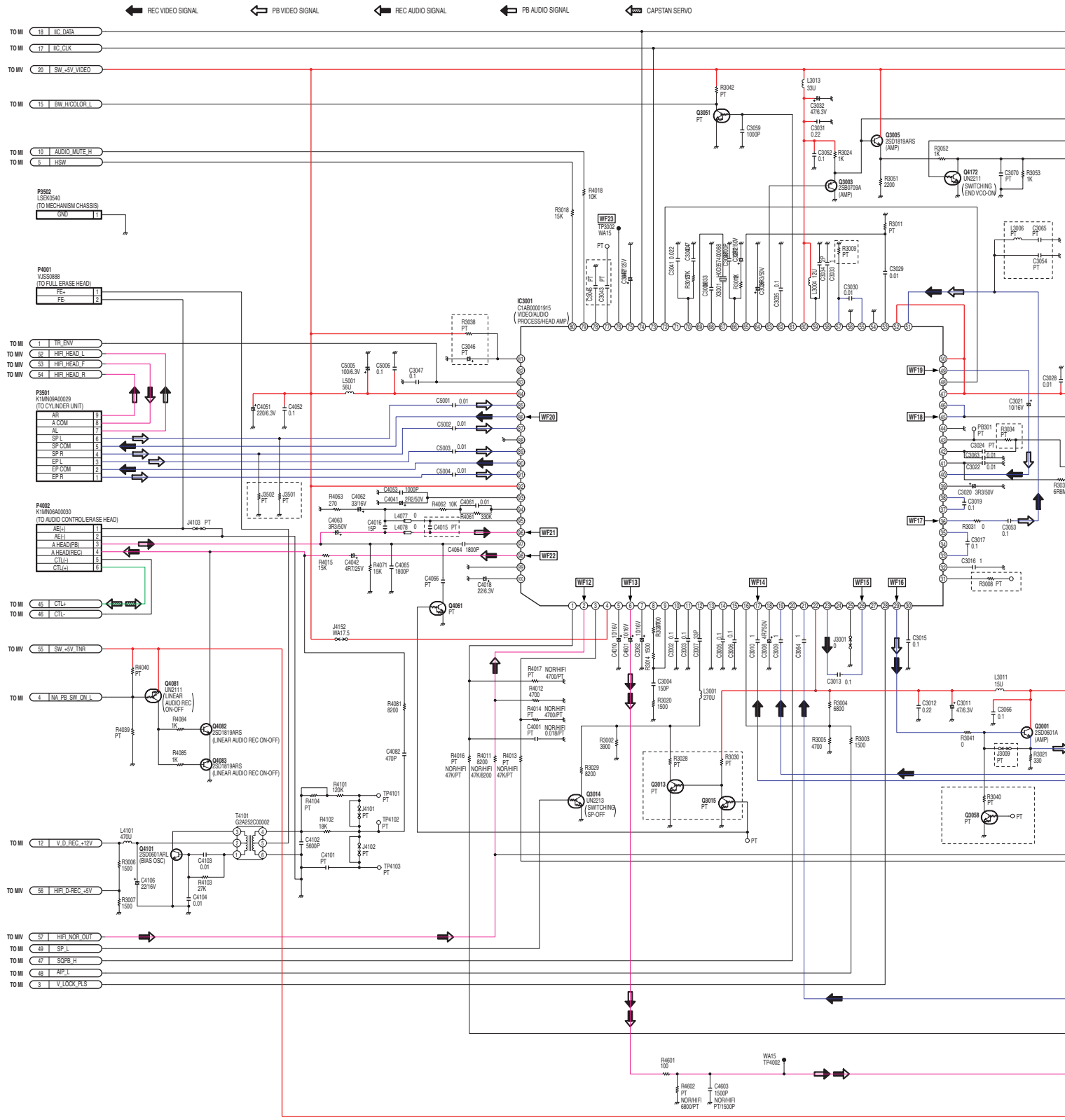
KEY VOLTAGE CHART

TERMINAL VOLTAGE	0V~0.6V	0.7V~1.9V	2.0V~3.1V	3.2V~4.4V
KEY DATA 1 (IC6001-1)	———	———	STOP/EJECT (SW6303)	———
KEY DATA 2 (IC6001-2)	———	REW (SW6304)	PLAY (SW6305)	FF (SW6306)
KEY DATA 3 (IC6001-3)	CH DOWN (SW6315)	———	———	———
KEY DATA 4 (IC6001-4)	REC (SW6311)	CH UP (SW6317)	———	POWER (SW6314)

LINK TO VOLTAGE CHART

MAIN I (SYSTEM CONTROL / SERVO) SCHEMATIC DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

MAIN II (VIDEO SIGNAL PROCESS / AUDIO) SCHEMATIC DIAGRAM

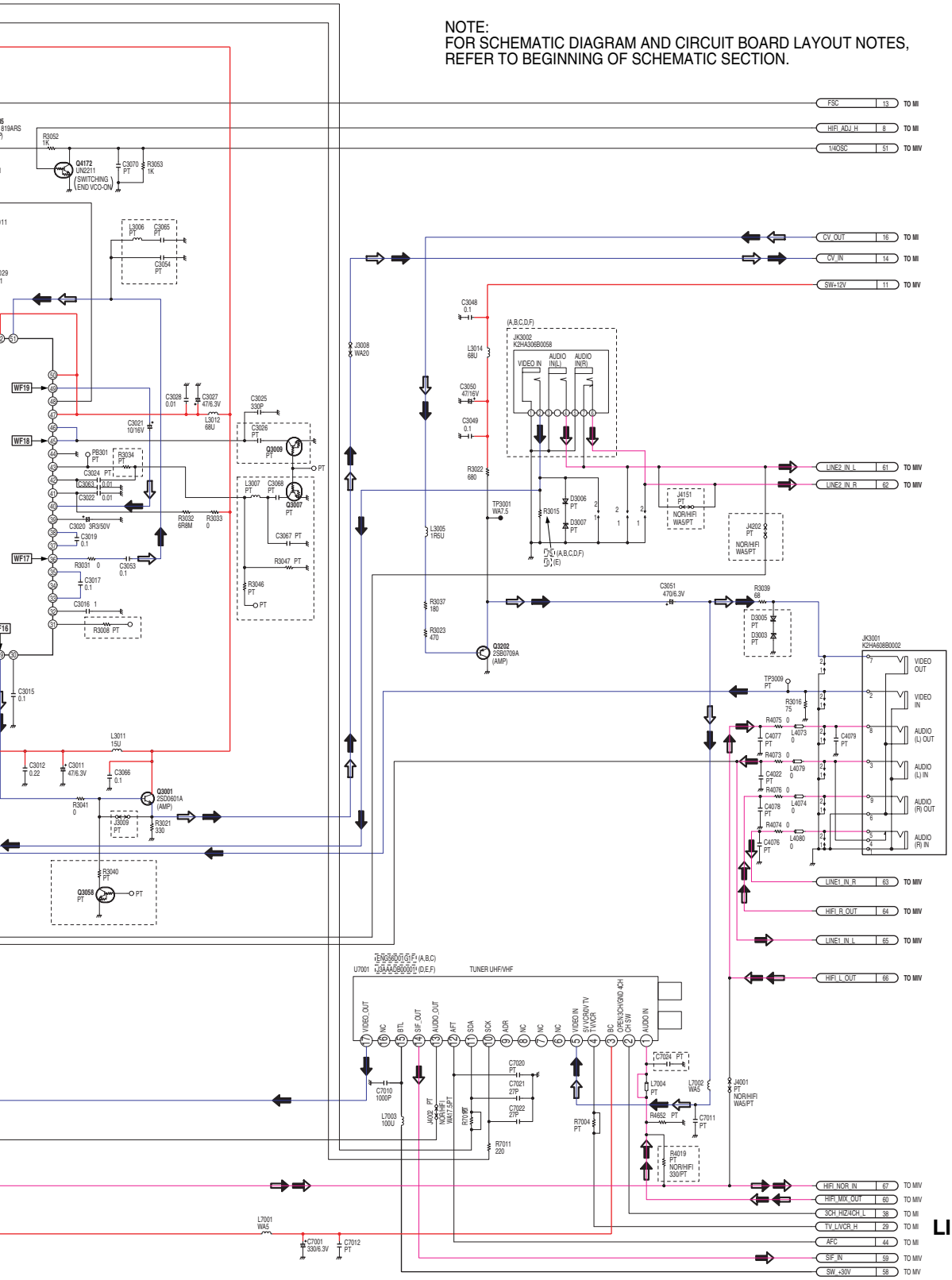


NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

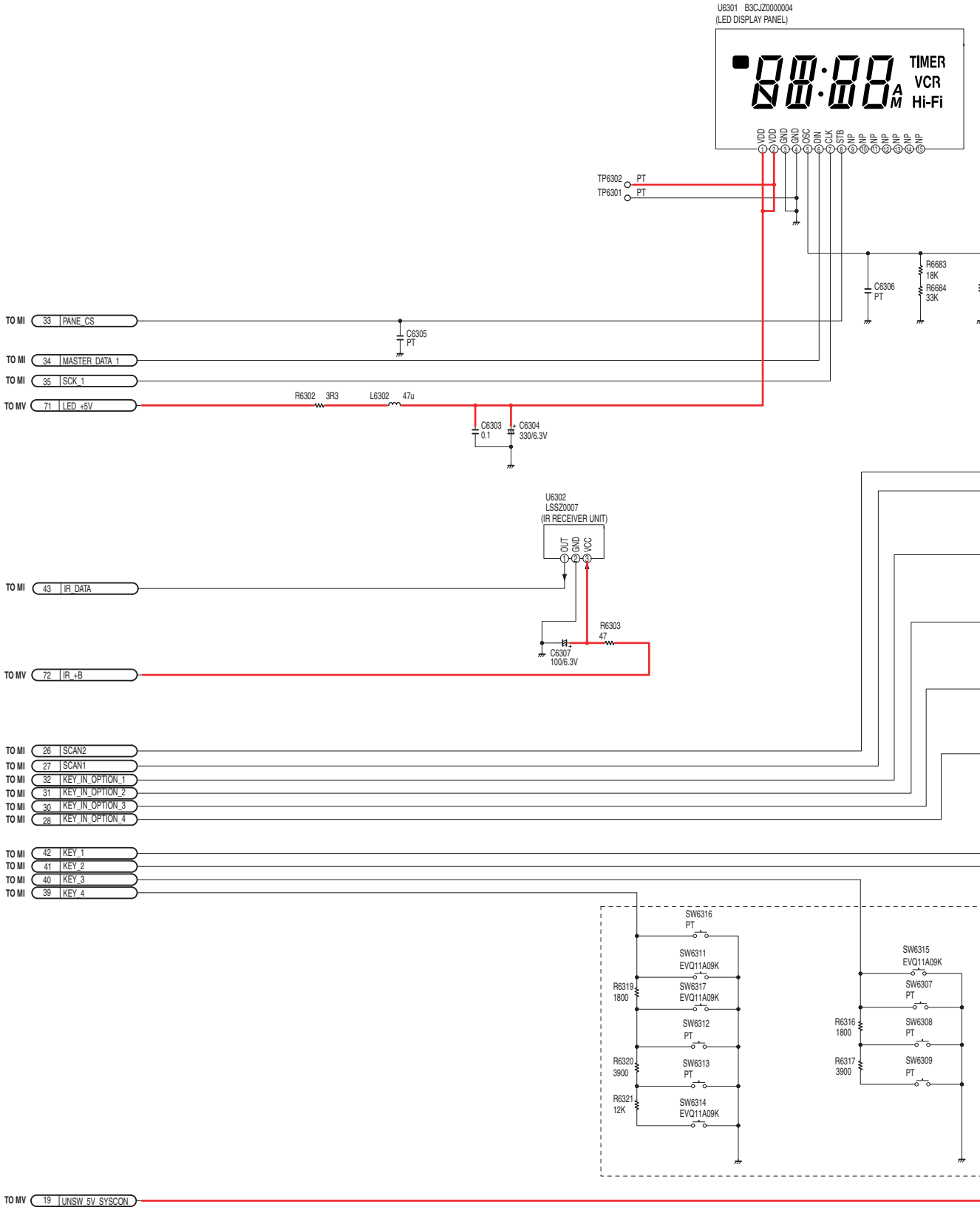
MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT



LINK TO VOLTAGE CHART

MAIN II (VIDEO SIGNAL PROCESS / AUDIO) SCHEMATIC DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

MAIN III (OPERATION) SCHEMATIC DIAGRAM

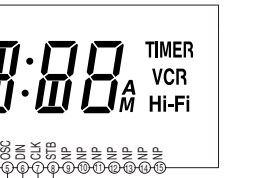


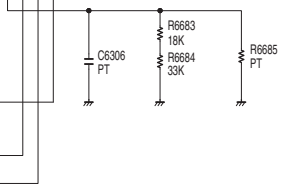
NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

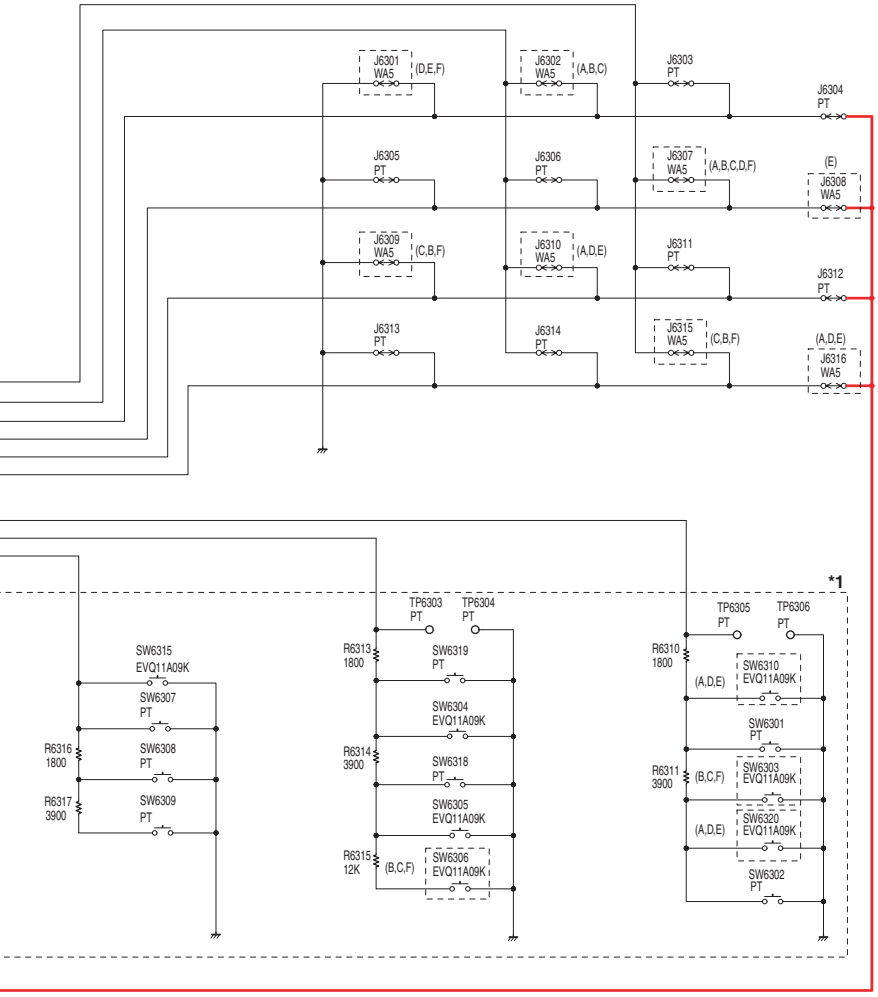
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT







*1

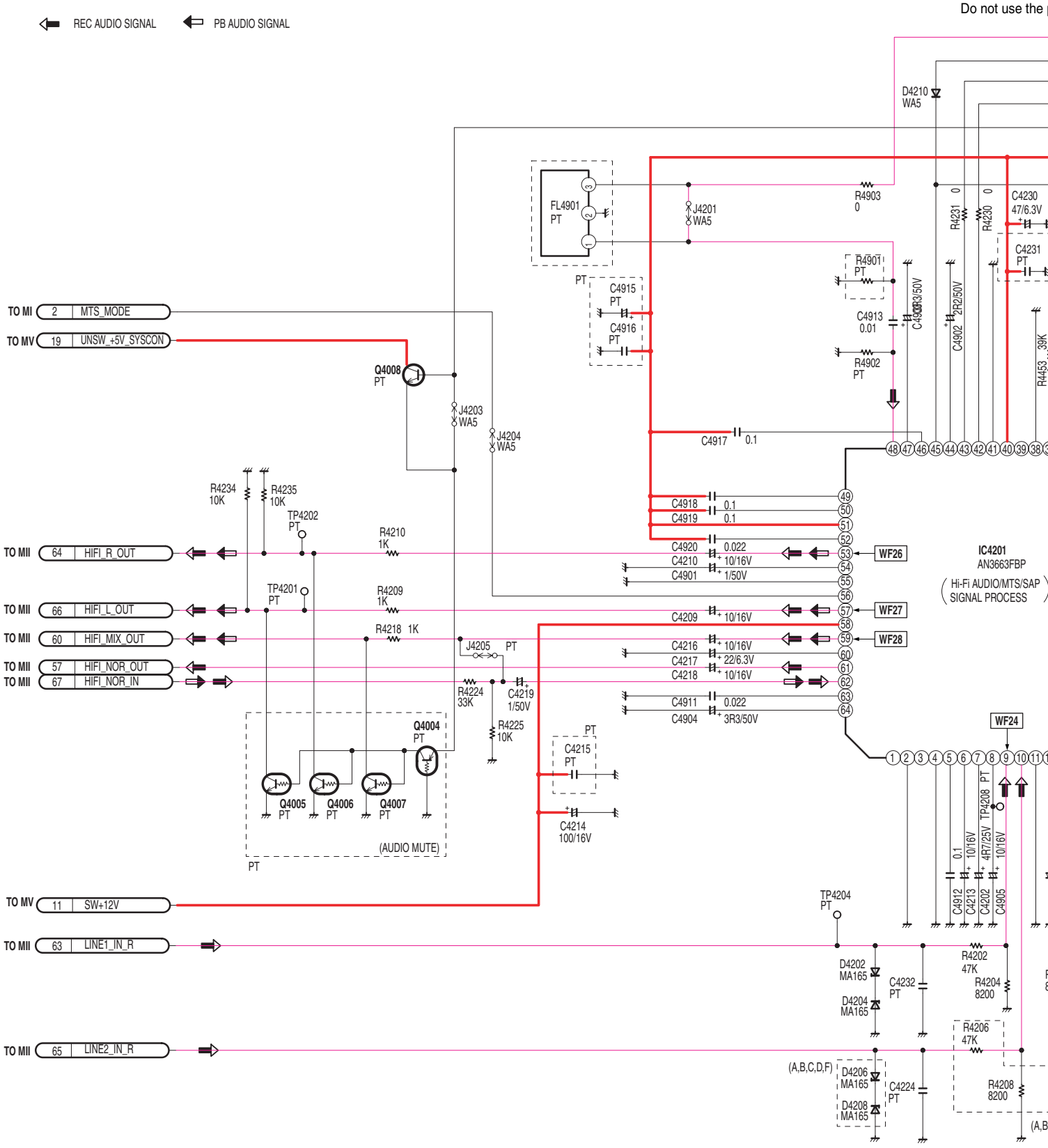
	A,D,E	B,C,F
SW6301	---	---
SW6302	---	---
SW6303	---	STOP/EJECT
SW6304	STOP/EJECT	REW
SW6305	PLAY	PLAY
SW6306	---	FF
SW6307	---	---
SW6308	---	---
SW6309	---	---
SW6310	REW	---
SW6311	REC	REC
SW6312	---	---
SW6313	---	---
SW6314	POWER	POWER
SW6315	CH_DOWN	CH_DOWN
SW6316	---	---
SW6317	CH_UP	CH_UP
SW6318	---	---
SW6319	---	---
SW6320	FF	---

LINK TO VOLTAGE CHART

MAIN III (OPERATION) SCHEMATIC DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

NOTE:
For placing a pu
be sure to use t
Do not use the

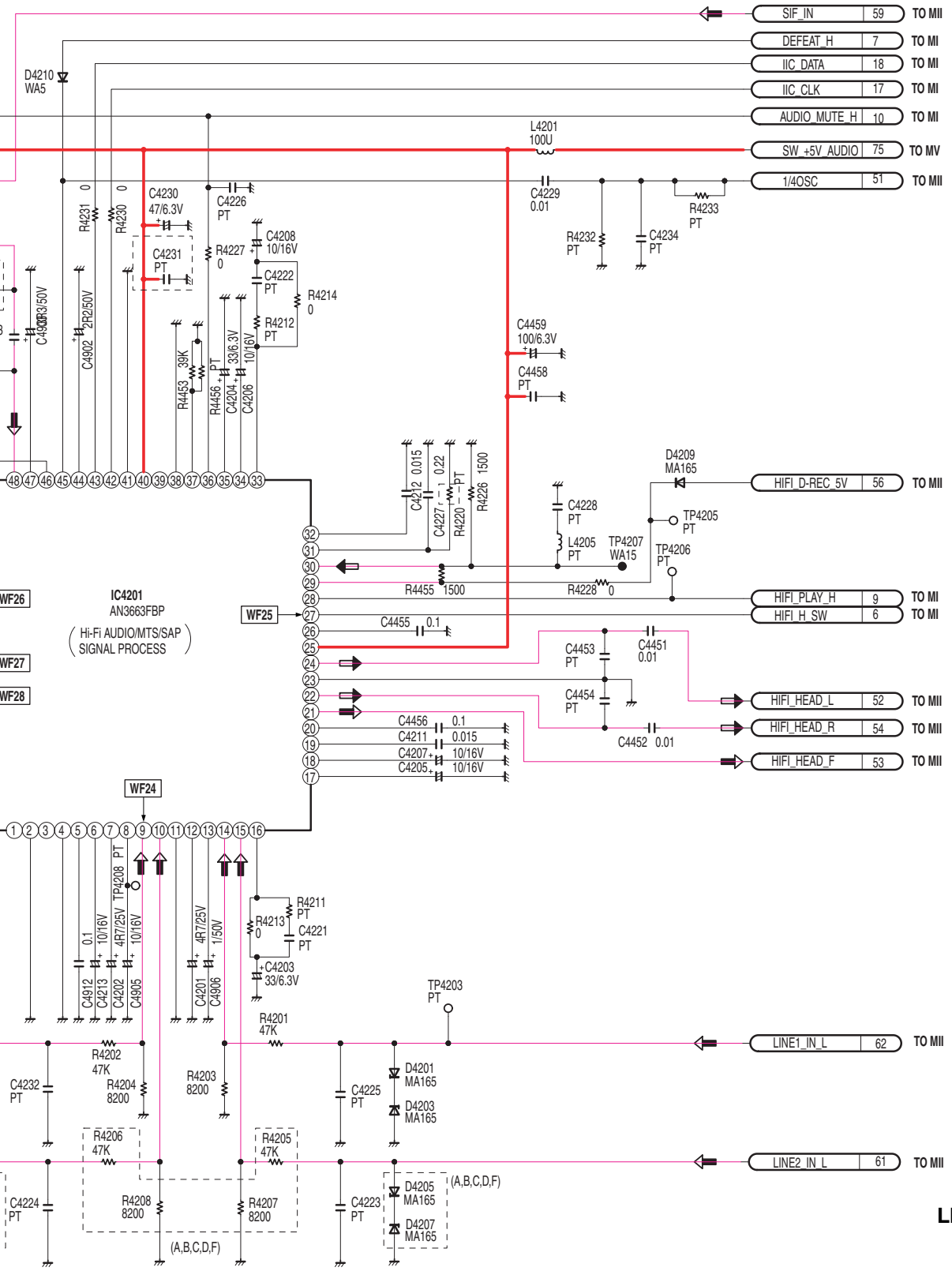


NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT



LINK TO VOLTAGE CHART

MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

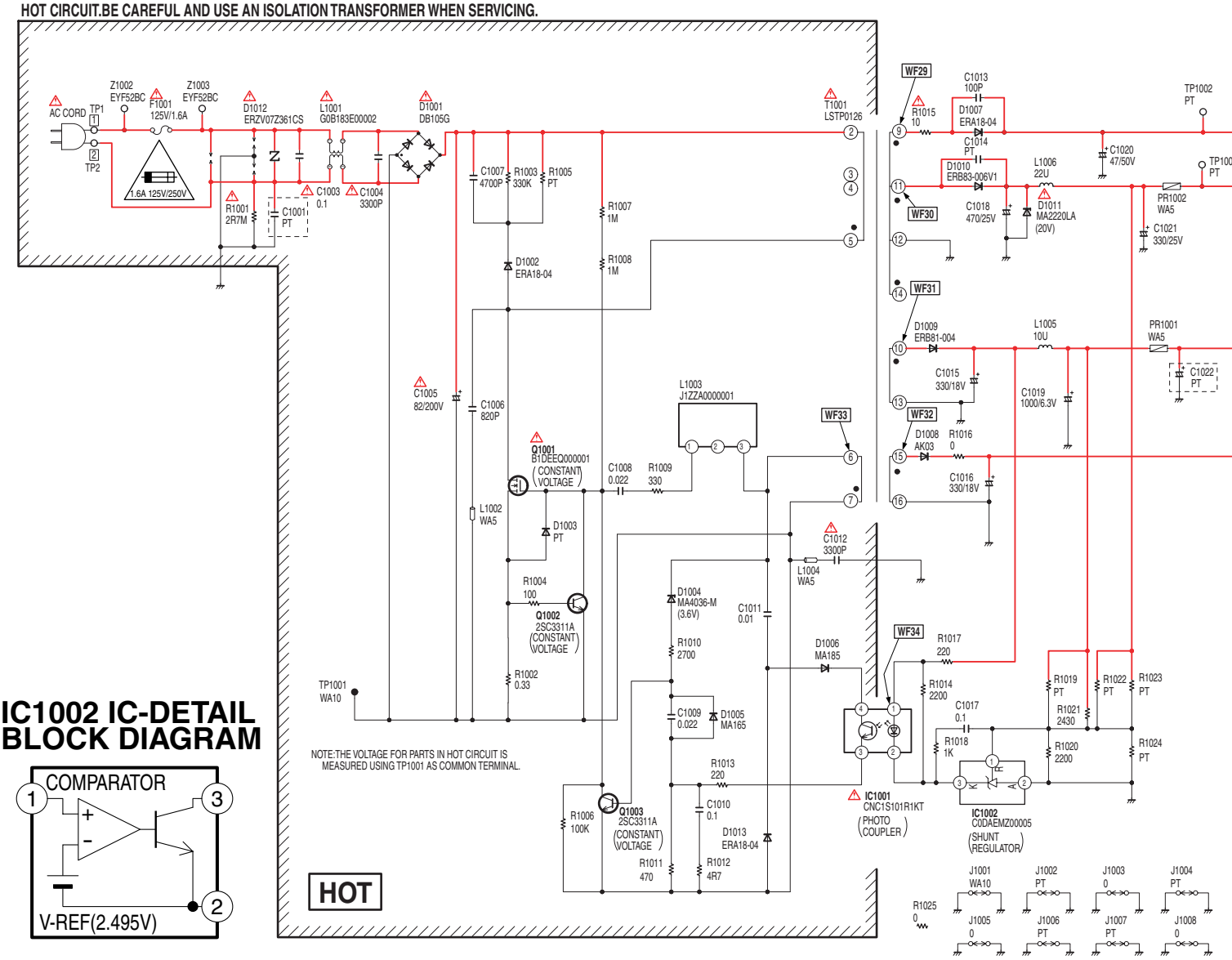
MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM

NOTE:
For plac
be sure
Do not u

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V/250V FUSE.
ATTENTION:POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V/250V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

HOT CIRCUIT.BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



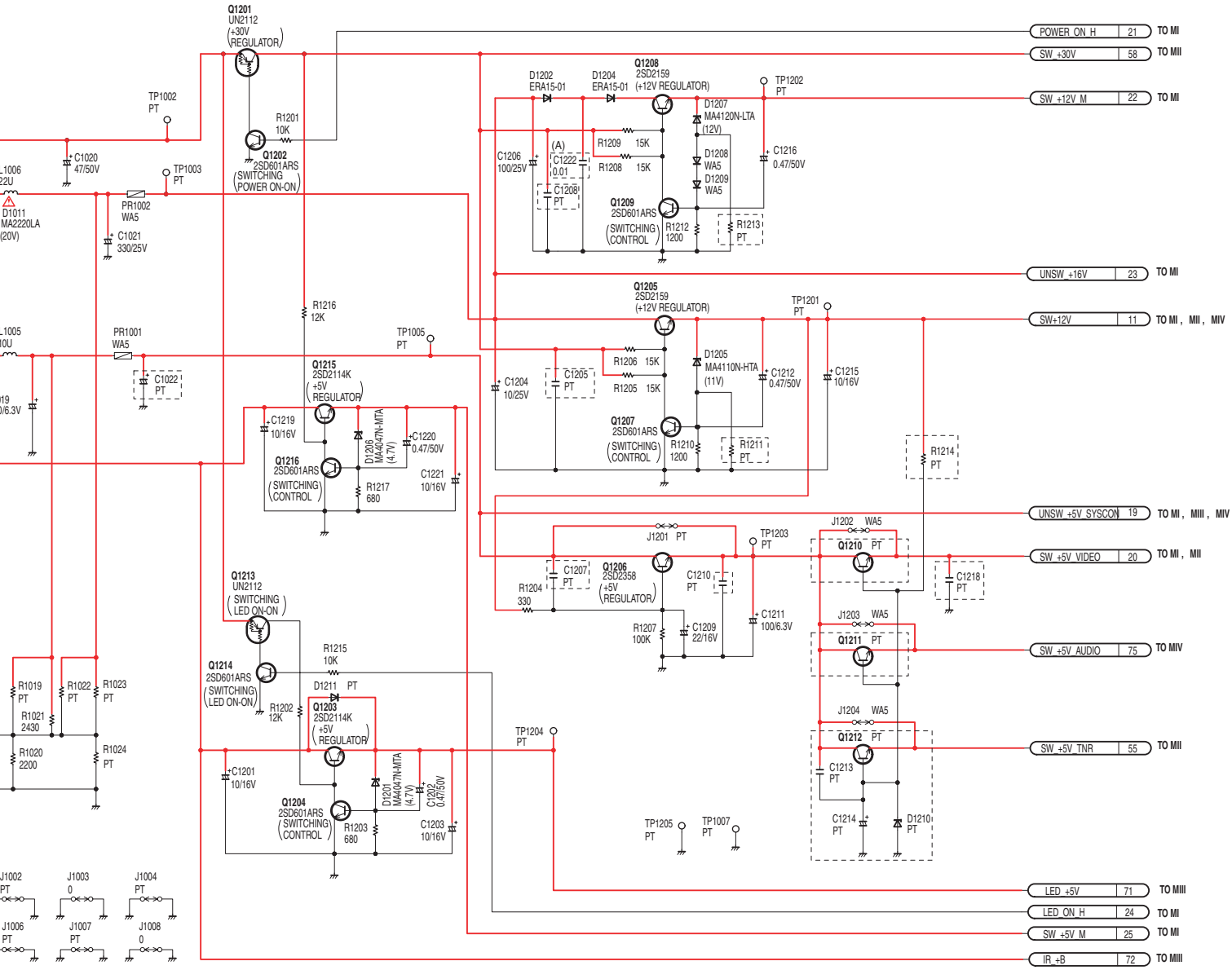
IC1002 IC-DETAIL BLOCK DIAGRAM

NOTE:
For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F
Not Used	PT

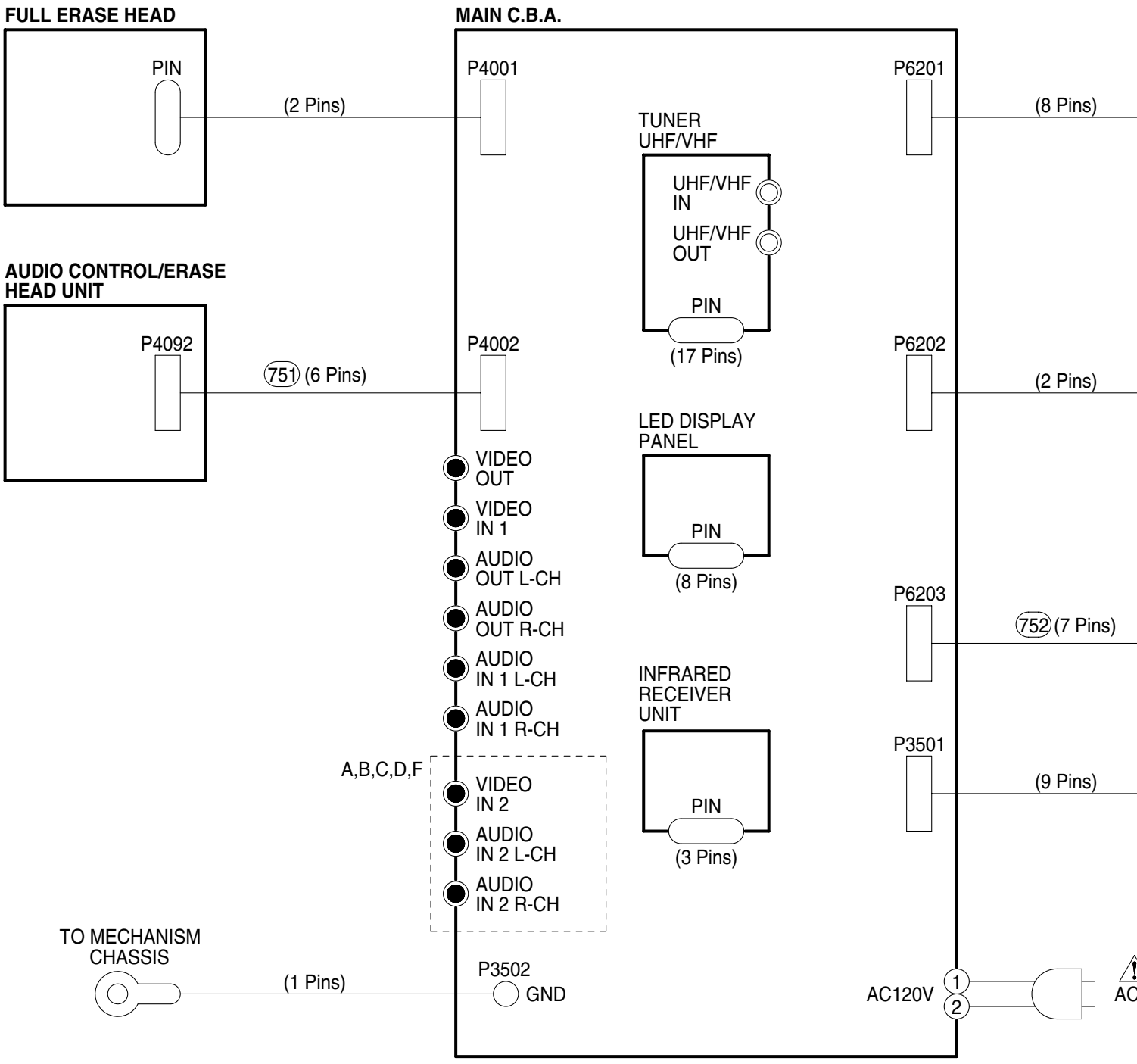


LINK TO VOLTAGE CHART

MAIN V (POWER SUPPLY) SCHEMATIC DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

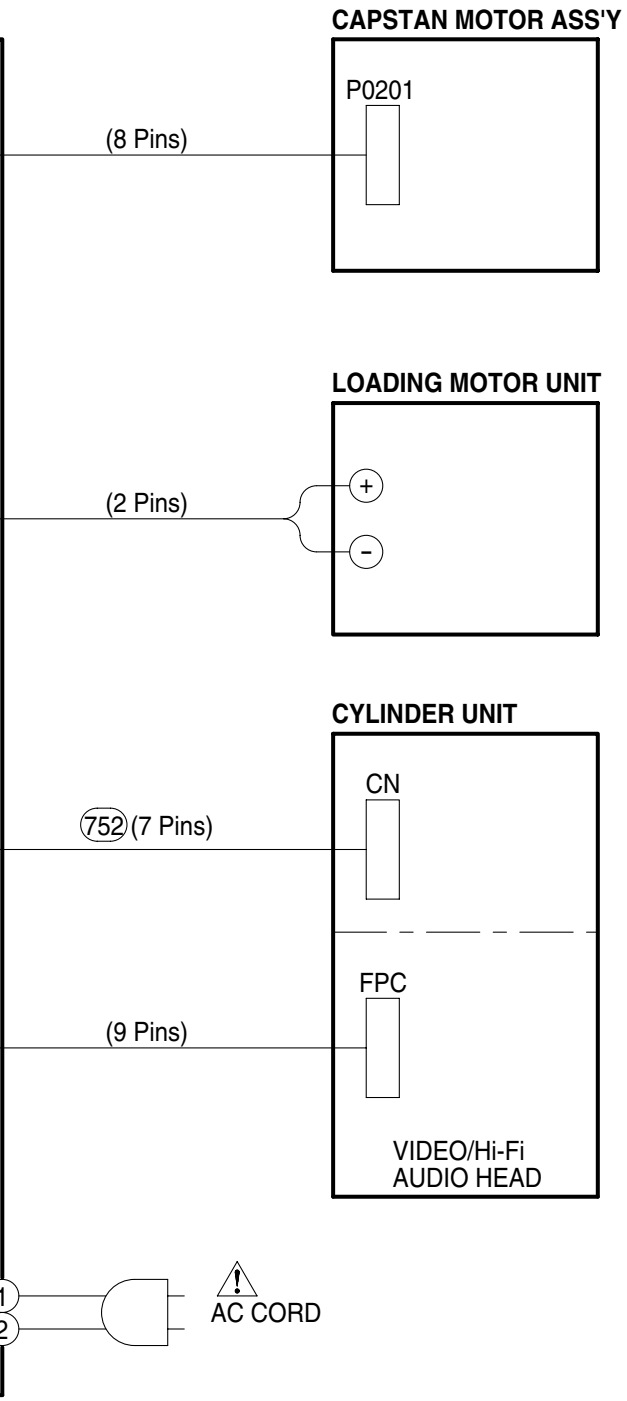
6.3. INTERCONNECTION SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



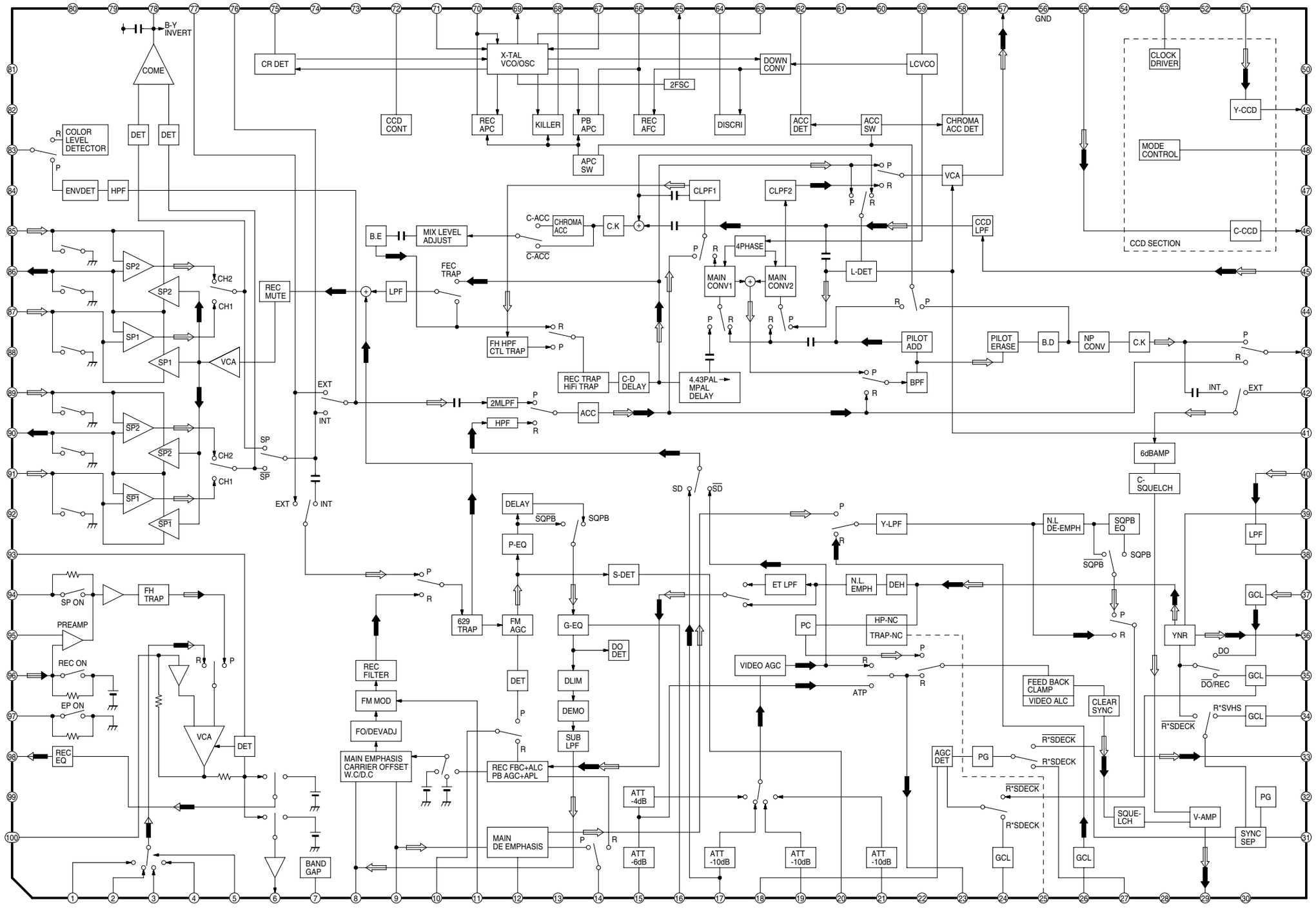
COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-V4524S	A
PV-V4624S	B
PV-V464S	C
PV-V4524S-K	D
PV-454S-K	E
PV-V4624S-K	F

INTERCONNECTION SCHEMATIC DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

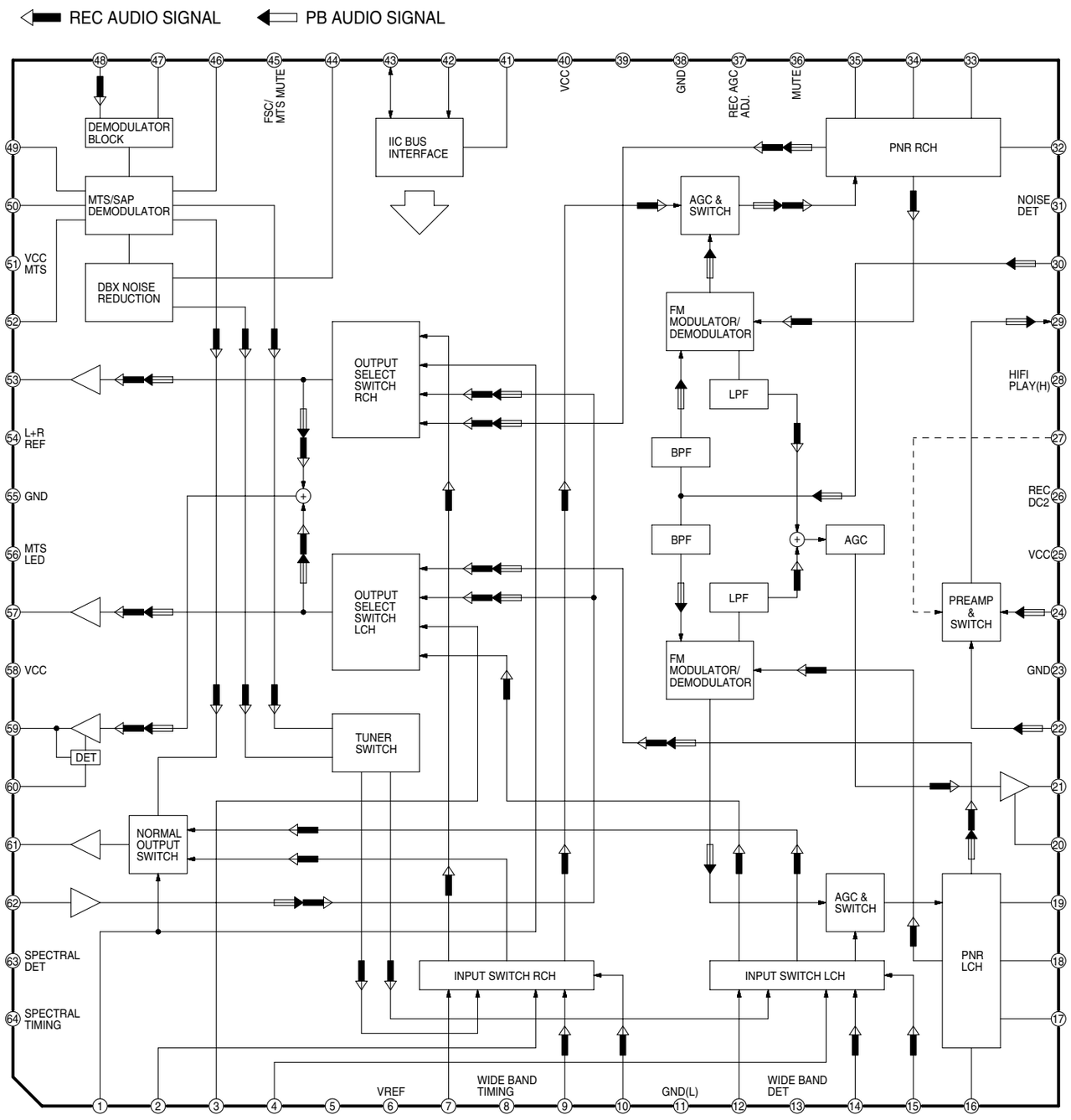
IC3001 VIDEO/AUDIO SIGNAL PROCESS/HEAD AMP IC-DETAIL BLOCK DIAGRAM

REC VIDEO SIGNAL　PB VIDEO SIGNAL　REC AUDIO SIGNAL　PB AUDIO SIGNAL



IC3001 DETAIL BLOCK DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

IC4201 Hi-Fi AUDIO/MTS SAP SIGNAL PROCESS IC-DETAIL BLOCK DIAGRAM



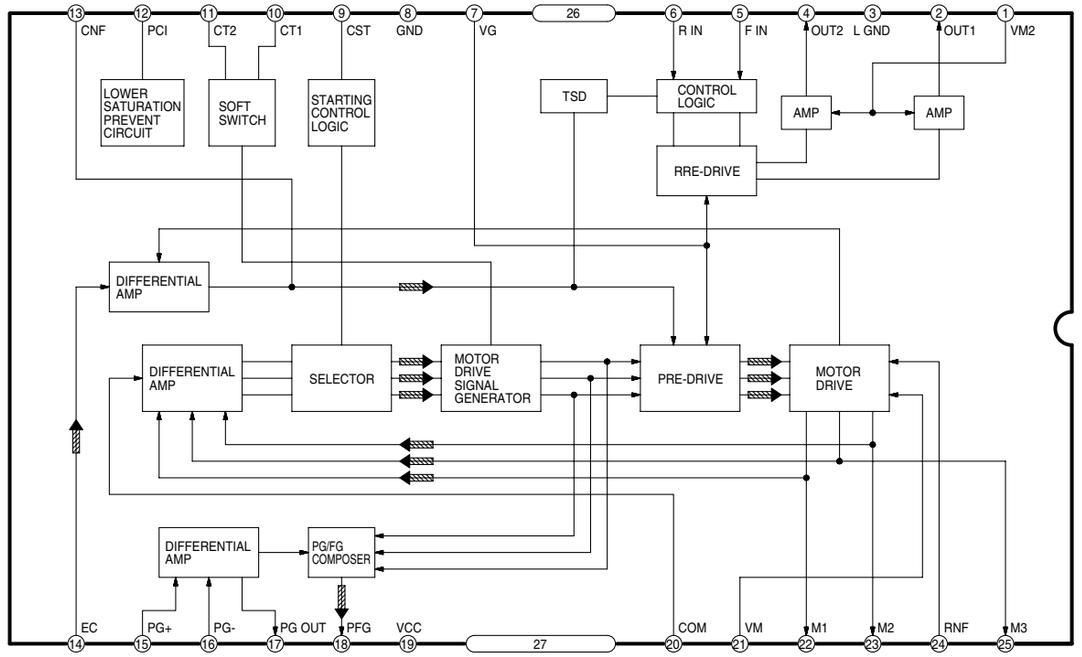
IC4201 DETAIL BLOCK DIAGRAM
PV-V4524S/PV-V4624S/PV-V464S/PV-V4524S-K/PV-454S-K/PV-V4624S-K

I/O CHART OF IC6001

Pin No.	Signal Name	I/O	Explanation
1	KEY 1	I	KEY DATA 1
2	KEY 2	I	KEY DATA 2
3	KEY 3	I	KEY DATA 3
4	KEY 4	I	KEY DATA 4
5	CYL REG SHORT L	I	REG12V short detection signal.
6	DTS AFC	I	Input terminal for "S-Curve" of Tuner AFC at channel selecting.
7	S PHOTO	I	Input terminal of the Tape End sensor detection. *More than 2.6V: Black tape part. *Less than 2.4V: Trans. Tape part.
8	T PHOTO	I	Input terminal of the Tape Beginning sensor detection. *More than 2.6V: Black tape part. *Less than 2.4V: Trans. Tape part.
9	TR ENV	I	Input terminal of the Video envelope signal.
10	MTS MODE	I	*STEREO + SAP: More than 2.6V *STEREO: 1.6V - 2.5V *MONO + SAP: 0.6V - 1.5V *MONO: 0 - 0.5V
11	TL	O	Control terminal for the Capstan current limit.
12	NC	O	Low fix.
13	V L PLS	O	Output terminal for the Artificial V-sync.
14	IR DATA	I	Input terminal for the Remote Controller.
15	NC	O	Low fix.
16	NA PB SW ON L	O	Recording control signal for the Linear Audio.
17	NC	O	Low fix.
18	HSW	O	Video head switching signal *L'/R = "High" *R'/L = "Low"
19	HF HSW	O	Head switching signal for Audio circuit.
20	D REC H	O	Video Delay Rec H
21	NC	O	Low fix.
22	DEFEAT H	O	Input/Output terminal for muting at channel selecting.
23	HIFI ADJ H	O	During Hifi Vco adjustment: "Low"
24	NC	O	Low fix.
25	NC	O	Low fix.
26	HIFI PB H	I	HiFi playback: "High" Normal playback: "Low"
27	NO S TAB L	I	SAFETY TAB DETECTION *With SAFETY TAB: "Low" *Without SAFETY TAB: "High"
28	A MUTE H	O	Audio muting signal: High = ON
29	3CH Hiz/4CH L	O	CH3: Hiz CH4: L
30	POS 4	I	MODE SW POSITION 4
31	POS 3	I	MODE SW POSITION 3
32	POS 2	I	MODE SW POSITION 2
33	POS 1	I	MODE SW POSITION 1
34	RST L	I	RESET Terminal.
35	XC IN	I	(Not used)
36	XC OUT	O	(Not used)
37	DVDD	-	VCC (5V) for Digital port.
38	X IN	I	Main clock (12MHz) osc. input terminal.
39	X OUT	O	Main clock (12MHz) osc. output terminal.
40	DVSS	-	Digital GND for OSC circuit.
41	OSC IN3	I	(Not used)
42	OSC OUT3	O	(Not used)
43	SUB CLK ST L	I	5V fix.
44	LC OSC IN	I	Input terminal of the LC Oscillation (For OSD dot clock)
45	LC OSC OUT	I	Output terminal of the LC Oscillation (For OSD dot clock)
46	NUB	-	Connected to the GND (Test terminal "B" in the factory).
47	4FSC LPF	I	OSC Filter connection terminal for Internal sync generator.
48	OSD FSC IN	I	Sub carrier (fsc) input terminal for sync generator.
49	VSS OSD	-	GND terminal for OSD circuit.
50	CV-IN	I	Input terminal for composite video signal.

Pin No.	Signal Name	I/O	Explanation
51	BW H/COLOR L	I	(Not used)
52	CV OUT	O	Output terminal for composite video signal.
53	VDD OSD	-	Power supply terminal for OSD.
54	HLF	I	LPF connection terminal for slicer.
55	V HOLD	I	Capacitor connection terminal of the Reference voltage generator circuit for the slicer.
56	CV IN	I	Composite video signal input terminal for the slicer.
57	NUA	-	Connected to the GND (Test terminal "A" in the factory).
58	SCAN2	O	Scan pulse 2
59	SCAN1	O	Scan pulse 1
60	KEY IN OPTION 4	I	Option/Key input terminal 4
61	VCR H/TV L	O	TV: L VCR: H
62	KEY IN OPTION 2	I	Option/Key input terminal 2
63	KEY IN OPTION 3	I	Option/Key input terminal 3
64	KEY IN OPTION 1	I	Option/Key input terminal 1
65	LOADING REV H	O	Loading motor control terminal.
66	PANE CS	O	LED serial chip selector
67	LOADING FWD H	O	Loading motor control terminal.
68	IC DATA OUT	O	Serial data output for LED.
69	IC DATA IN	I	Low fix.
70	IC DATA CLK	O	Serial clock output for LED.
71	IIC CLK	O	Serial communication terminal (IIC) for IC3001/FM audio IC/ EEPROM/TUNER.
72	IIC DAT	I/O	Serial communication terminal (IIC) for IC3001/FM audio IC/ EEPROM/TUNER.
73	750kHZ/ROM CORE	O	ROM Correction confirmation mode.
74	CAP F/R	O	The rotation direction control terminal of the capstan driver. *RVS = "High" *FWD = "Low"
75	LED ON H	O	*LED ON: "High" *LED OFF: "Low"
76	CAP EC PWM	O	Power supply terminal for the capstan motor control.
77	CYL EC PWM	O	Power supply terminal for the cylinder motor control.
78	P DOWN L	I	Input terminal for the power failar detection.
79	S REEL	I	Input terminal of the S.Reel pulse.
80	T REEL	I	Input terminal of the T.Reel pulse.
81	SP L	O	REC/PLAY MODE: SP = "Low"
82	EX FF/REW L	O	Control signal filter select terminal in FF/REW mode. *During FF/REW: Hi-Z *Except FF/REW: Low
83	P ON H	O	ON/OFF control terminal for the VCR power. Power ON: "High"
84	AIP L	I/O	Simplified AI playback ON/OFF control. AI playback ON: "Low"
85	SQPB IN H	I	SQPB input terminal.
86	C FG OUT	O	Output terminal for the Capstan FG AMP signal.
87	C FG IN	I	Input terminal for the Capstan FG AMP signal.
88	AVSS AMP	-	GND for Analogue circuit.
89	NC	-	(Not used)
90	Y PFG IN	I	Input terminal for the Cylinder PG/FG.
91	V REF OUT	O	1/2 VDD reference voltage output terminal for the Analogue AMP.
92	V REF IN	I	1/2 VDD reference voltage input terminal for the Analogue AMP.
93	NC	-	(Not used)
94	CTL-	I/O	terminal for the Control head (-).
95	CTL+	I/O	terminal for the Control head (+).
96	CTL AMP REF	I	Capacitor connection terminal for reference of the control AMP.
97	CTL OUT	O	Output terminal for the Control AMP.
98	AVDD AMP	-	Power supply terminal for Analogue AMP.
99	AVDD AD	-	Reference power supply terminal for the AD/8bit DA.
100	NC	O	Low fix.

IC6201
CYLINDER/LOADING MOTOR DRIVE IC-DETAIL BLOCK DIAGRAM



CAPSTAN MOTOR ASS'Y BLOCK DIAGRAM

NOTE:CAPSTAN MOTOR ASS'Y IS SUPPLIED AS A UNIT ONLY.